A 26-year-old infertile body builder with a five- year history of heavy anabolic steroid use is azoospermic 12 months after discontinuing all steroids. His serum testosterone is 150 ng/dl (normal 300- 900), and FSH is normal. The next step is:

A observation.

B testosterone replacement.

C hCG.

D testicular biopsy.

E clomiphene citrate.

The therapy most likely to cause painful gynecomastia in men with normal serum testosterone is:

A megestrol acetate.

B leuprolide and flutamide.

C ketoconazole.

D bicalutamide.

E finasteride.

The therapy most likely to cause painful gynecomastia in men with normal serum testosterone is:

D: "bicalutamide." is correct.

Breast tenderness and enlargement during hormonal therapy for prostate cancer are due to elevated serum estrogens. Leuprolide inhibits pituitary LH release so there is no rise in serum testosterone or estrogens. Antiandrogens (such as flutamide and bicalutamide) used as monotherapy cause a rise in plasma estradiol levels leading to gynecomastia in about 40% of patients. Finasteride and ketoconazole are infrequently (< 5%) associated with gynecomastia.

McConnell JD: Physiologic basis of endocrine therapy for prostate cancer. UROL CLIN N AM 1991;18(1):1.

Kolveenbag JCM, Blackledge GRP: Worldwide activity and safety of bicalutamide: A summary review. UROL 1996;47(1 A Supp).

Bilateral orchiectomy most consistently alters:

A libido.

B orgasm.

C ejaculation.

D erection.

E serum prolactin level.

Bilateral orchiectomy most consistently alters:

A: "libido." is correct.

Serum testosterone concentration is most related to sexual interest or libido rather than to erection, emission, or ejaculation. A surprising number of individuals who have had a bilateral orchiectomy retain the ability to have erection. Serum prolactin levels are sometimes inversely related to serum testosterone (as in hyperprolactinemic states), but otherwise there is no consistent relationship. Bilateral orchiectomy does not cause any reproducible change in the serum prolactin level.

Lue TF: Physiology of penile erection and pathophysiology of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1157-1180.

The irrigating solution which should be used for percutaneous nephroscopy and ureteroscopy is:

A 1.5% glycine.

B sterile water.

C 3% glycine.

D 0.9% sodium chloride.

E 0.15% sodium chloride.

The irrigating solution which should be used for percutaneous nephroscopy and ureteroscopy is:

D: "0.9% sodium chloride." is correct.

Intravascular fluid absorption can occur with ureteroscopy and percutaneous nephroscopy. This may be massive during percutaneous nephrostolithotomy if a closed irrigation and drainage system is used. Normal saline is both isotonic and non-conductive whereas the other listed fluids do not share both of these properties. There is no advantage to using a solution other than normal saline during these procedures unless intrarenal electrosurgery is being performed. Only in this situation is it necessary to change to using glycine or sorbitol as the irrigant.

Berkman SA, Smith EA: Considerations in pediatric endoscopy, in Graham SD Jr (ed): GLENN'S UROLOGIC SURGERY, ed 5. Philadelphia, Lippincott-Raven Publishers, 1998, p 791.

A 55-year-old man undergoes a left lower pole partial nephrectomy for a 3.5 cm solid renal mass. The contralateral kidney is normal. Two days postoperatively, his serum hematocrit drops from 32% to 18% over 24 hours. The urine is dark burgundy in color. He is afebrile and vital signs are stable. The next best step is:

A angiography and embolization of bleeding vessels.

B reoperation with suture ligation of bleeding vessels.

C reoperation with nephrectomy.

D bedrest, serial monitoring, and needed transfusions.

E cystoscopy with ureteral stent placement.

A 55-year-old man undergoes a left lower pole partial nephrectomy for a 3.5 cm solid renal mass. The contralateral kidney is normal. Two days postoperatively, his serum hematocrit drops from 32% to 18% over 24 hours. The urine is dark burgundy in color. He is afebrile and vital signs are stable. The next best step is:

D: "bedrest, serial monitoring, and needed transfusions." is correct.

Complications of partial nephrectomy include hemorrhage, urinary fistula formation, ureteral obstruction, renal insufficiency, and infection. Significant intraoperative bleeding can occur in patients who are undergoing partial nephrectomy. The need for early control and ready access to the renal artery is emphasized. Postoperative hemorrhage may be self-limiting if confined to the retroperitoneum, or it may be associated with gross hematuria. The initial management of postoperative hemorrhage is expectant with bedrest, serial hemoglobin and hematocrit determinations, frequent monitoring of vital signs, and blood transfusions as needed. Angiography may be helpful in some patients to localize actively bleeding segmental arteries, which may be controlled by angioinfarction. Severe intractable hemorrhage may necessitate re-exploration with early control of the renal vessels and ligation of the active bleeding points.

Campbell SC, Novick AC, Streem SB, Klein E, et al: Complications of nephron sparing surgery for renal tumors. J UROL 1994;151:1177-1180.

A six-year-old girl with a failed dismembered pyeloplasty for ureteropelvic junction obstruction has been left with almost no extrarenal pelvis. In salvaging the kidney by ureterocalycostomy, the most important technical point is:

A closure of renal parenchyma around ureter.

B omental wrap of ureter.

C downward renal mobilization.

D wide ureteral mobilization.

E amputation of lower renal pole.

A six-year-old girl with a failed dismembered pyeloplasty for ureteropelvic junction obstruction has been left with almost no extrarenal pelvis. In salvaging the kidney by ureterocalycostomy, the most important technical point is:

E: "amputation of lower renal pole." is correct.

In order to avoid obstruction of the ureter by circumferential cortical fibrosis, an adequate amputation of the lower pole to provide access to the lower pole calyx is important. Preservation of the renal capsule to cover the parenchyma helps with hemostasis. A widely-spatulated, precise ureterocalycostomy will then usually be successful.

McDougal WS: Ureterocalicostomy, in Marshall FF (ed): TEXTBOOK OF OPERATIVE UROLOGY. Philadelphia, WB Saunders Co, 1996, pp 347-348.

A nine-year-old girl is struck in the abdomen and right flank by an automobile. She is alert and her vital signs are stable. She has moderate guarding in her right upper quadrant and decreased bowel sounds. Her hematocrit is 33%, and she has blood-tinged urine. A CT scan demonstrates a 4 cm hepatic laceration and hematoma and a 3 cm laceration of the right kidney with minimal contrast extravasation. The next step in management is:

A observation.

B peritoneal lavage.

C renal and hepatic arteriography.

D percutaneous drain placement.

E surgical repair of the lacerations.

A nine-year-old girl is struck in the abdomen and right flank by an automobile. She is alert and her vital signs are stable. She has moderate guarding in her right upper quadrant and decreased bowel sounds. Her hematocrit is 33%, and she has blood-tinged urine. A CT scan demonstrates a 4 cm hepatic laceration and hematoma and a 3 cm laceration of the right kidney with minimal contrast extravasation. The next step in management is:

A: "observation." is correct.

In children who sustain blunt abdominal trauma, CT scan can define injuries to the abdominal viscera quite well. Conservative treatment in the stable patient with follow-up CT scan, if needed, will result in reducing the rate of abdominal exploration in the patient with stable visceral injuries to less than 15%.

McAninch JW: Renal Injuries, in Gillenwater JY, Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY, ed 3. St. Louis, Mosby Year Book, 1996, pp 539-554.

The anatomical relationship of the left internal spermatic vein(s) to the left ureter in the retroperitoneum 2 cm above the internal inguinal ring is:

A anterior and lateral.

B anterior and medial.

C posterior and lateral.

D posterior and medial.

E medial and adjacent.

The anatomical relationship of the left internal spermatic vein(s) to the left ureter in the retroperitoneum 2 cm above the internal inguinal ring is:

A: "anterior and lateral." is correct.

The left spermatic vein courses from the internal ring in the anterior body wall to the renal vein in the retroperitoneum. At the area of the internal ring, the vein is anterior and lateral to the ureter which crosses the iliac vessels. The vein crosses anterior to the ureter in its mid-portion and inserts into the left renal vein medial to the upper ureter. In ligating a varicocele, venous ligation may be carried out within the inguinal canal or intra-abdominally, in which case this anatomic relationship is important to know.

Kabalin JN: Surgical anatomy of the retroperitoneum, kidneys, and ureters, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 69.

A 72-year-old man with a large renal cell carcinoma has right hip pain. Bone scan shows multiple metastases and plain films of the right femur show a 4.0 cm lytic lesion. Management should include:

A external beam radiation therapy to the femur.

B strontium-89.

C open stabilization of the femur.

D pain management.

E immunotherapy.

A 72-year-old man with a large renal cell carcinoma has right hip pain. Bone scan shows multiple metastases and plain films of the right femur show a 4.0 cm lytic lesion. Management should include:

A external beam radiation therapy to the femur.

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C open stabilization of the femur.

D pain management.

E immunotherapy.

تم حفظ الصورة!

A 72-year-old man with a large renal cell carcinoma has right hip pain. Bone scan shows multiple metastases and plain films of the right femur show a 4.0 cm lytic lesion. Management should include:

C: "open stabilization of the femur." is correct.

Surgical treatment of bony metastases from renal cell carcinoma is indicated for weight-bearing bones with lytic lesions of greater than 3 cm. Although this patient has a poor prognosis, average survival will be one year and, should he develop a femur fracture, the quality of his remaining survival will be markedly diminished.

Nielson OS, Monro AJ, Tannock IF: Bone metastases: Pathophysiology and management policy. J CLIN ONCOL 1991;9:509-24.

Koslowski JM: Management of distant solitary recurrence in the patient with renal cancer. UROL CLIN N AM 1994;21:601-624.

Compared to a Kock pouch, a continent urinary diversion using detubularized right colon with a tunneled ureteral reimplant has a higher rate of:

A ureteral obstruction.

B nocturnal incontinence.

C difficult catheterization.

D bowel obstruction.

E electrolyte disorders.

Compared to a Kock pouch, a continent urinary diversion using detubularized right colon with a tunneled ureteral reimplant has a higher rate of:

A: "ureteral obstruction." is correct.

A Kock pouch uses an intussuscepted nipple valve afferent limb to prevent reflux and has a lower incidence of ureteral obstruction than a tunneled reimplantation. There is no apparent difference between the two techniques in the incidence of incontinence. A Kock pouch is associated with a higher rate of difficult catheterization of the efferent valve.

Benson MC, Olsson CA: Continent urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 3218-3236.

A 23-year-old man undergoes cavernosometry for evaluation of erectile dysfunction. After prostaglandin E1 (20 mcg) is injected, the intracorporeal pressure (ICP) does not rise within ten minutes. After two minutes of saline infusion (100 cc/min), the ICP is 30 mm Hg. He has:

A. normal arterial inflow and normal ability to store blood intracavernosally.

B. failure to store blood intracavernosally.

C. normal arterial inflow only.

D. abnormal arterial inflow and inability to store blood intracavernosally.

E. abnormal arterial inflow and normal ability to store blood intracavernosally.

A 23-year-old man undergoes cavernosometry for evaluation of erectile dysfunction. After prostaglandin E1 (20 mcg) is injected, the intracorporeal pressure (ICP) does not rise within ten minutes. After two minutes of saline infusion (100 cc/min), the ICP is 30 mm Hg. He has:

B: "failure to store blood intracavernosally." is correct.

The dynamic infusion cavernosometry shows that since the intracavernous pressure (ICP) did not rise following PGE1 injection (before saline infusion), the patient either had poor arterial in-flow and/or failure to store intracavernosally. The fact that his ICP did not rise following saline infusion suggests that the patient does not have the ability to store blood intracavernosally. Cavernosometry cannot provide any information as to the status of the arterial system.

Lue TF, Broderick G: Evaluation and non-surgical management of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders, 1998, pp 1181-1214.

The most frequent complication after partial nephrectomy is:

A bleeding.

B urinary fistula.

C renal failure.

D UTI.

E renal infarction.

The most frequent complication after partial nephrectomy is:

B: "urinary fistula." is correct.

In a recently reported large series of partial nephrectomies, urinary fistula was reported as the most frequent complication (17%), followed by renal failure, infection, bleeding, and vascular thrombosis. Fistulas occurred more frequently in larger, centrally located tumors and those removed with an ex vivo approach.

Campbell SC, Novick AC, Streem SB, Klein E, et al: Complications of nephron sparing surgery for renal tumors. J UROL 1994;151:1177-80.

The best test to diagnose acute bacterial cystitis prior to therapy is:

A nitrite test.

B microscopy.

C leukocyte esterase test.

D streak plate culture.

E pour plate culture.

The best test to diagnose acute bacterial cystitis prior to therapy is:

A nitrite test.

B microscopy.

C leukocyte esterase test.

D streak plate culture.

E pour plate culture.

The best test to diagnose acute bacterial cystitis prior to therapy is:

B: "microscopy." is correct.

Microscopic examination of the urine is the most rapid and inexpensive means to diagnose UTIs and determine the response to therapy. It provides useful information concerning the likely invaders and whether cultures and susceptibility tests might be needed. The urine may be examined with or without staining and with or without centrifugation, depending on the expertise of the examiner. Unstained specimens are useful for rapid diagnosis. Gram stains provide more reliable information about the potential pathogen.

Kunin CM: URINARY TRACT INFECTIONS: DETECTION, PREVENTION AND MANAGEMENT. Baltimore, Williams & Wilkins, 1997, pp 310-315.

A 42-year-old woman has a blood pressure of 180/115 mm Hg. Serum chemistries include: BUN 14 mg/dl, creatinine 0.9 mg/dl, Na 140 mEq/l, CO2 28 mEq/l, K 3.1 mEq/l, Cl 100 mEq/l, calcium 10.4 mg/dl, and phosphorus 3.4 mg/dl. The plasma renin is 0.5 mg/ml/hr (normal: 1.0-8.0). The most likely diagnosis is:

A pheochromocytoma.

B renal tubular acidosis.

C renal artery stenosis.

D Page kidney.

E primary hyperaldosteronism.

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E: "primary hyperaldosteronism." is correct.

The findings of hypertension, hypokalemia, and suppressed plasma renin activity are consistent with primary hyperaldosteronism. With renal artery stenosis or a Page kidney, the plasma renin level should be elevated. The serum CO2 of 28 mEq/l mitigates against renal tubular acidosis. There are no data to support a diagnosis of pheochromocytoma in this patient.

Novick AC: Surgery for primary hyperaldosteronism. UROL CLIN N AM 1989;16:535.

A 38-year-old man has testicular pain two months after testicular sperm extraction for azoospermia. He has a 1 cm hypoechoic lesion in his right testis on ultrasound. Tumor markers are negative. The next step is:

A repeat tumor markers.

B serum testosterone.

C radical orchiectomy.

D repeat scrotal ultrasound in three months.

E testicular biopsy.

A 38-year-old man has testicular pain two months after testicular sperm extraction for azoospermia. He has a 1 cm hypoechoic lesion in his right testis on ultrasound. Tumor markers are negative. The next step is:

D: "repeat scrotal ultrasound in three months." is correct.

Intratesticular lesions are common after testis biopsies including testicular sperm extraction. Most of these lesions are hypoechoic and reflect inflammation or small hematomas. Although serum testosterone levels may be transiently affected, this test will not affect management. Testicular biopsy is unlikely to be helpful. A repeat scrotal ultrasound in three months is likely to show resolution of the lesion.

Harrington TG, Schauer D, Gilbert BR. Percutaneous testis biopsy: An alternative to open testicular biopsy in the evaluation of the subfertile man. J UROL 1996;156:1647-1651.

Schlegel PN, Su L-M: Physiologic consequences of testicular sperm extraction. HUM REPROD 1997;12:1688-1692.

A 68-year-old man with end-stage renal failure due to chronic glomerulonephritis has been on peritoneal dialysis for three years. He is anuric and asymptomatic. An ultrasound study reveals several simple non-echogenic cysts involving the left kidney, and no right renal masses are seen. The best management is:

A left nephrectomy.

B CT scan.

C renal arteriography.

D repeat ultrasound in two years.

E conversion to hemodialysis.

A 68-year-old man with end-stage renal failure due to chronic glomerulonephritis has been on peritoneal dialysis for three years. He is anuric and asymptomatic. An ultrasound study reveals several simple non-echogenic cysts involving the left kidney, and no right renal masses are seen. The best management is:

D: "repeat ultrasound in two years." is correct.

Acquired renal cystic disease (ARCD) is known to occur in up to 45% of patients with chronic renal failure. Retrospective studies have indicated that renal cell carcinoma may develop in a small percentage (< 10%) of patients with ARCD. For this reason, periodic ultrasound is now recommended for patients on chronic dialysis. It is appropriate to consider CT, arteriography, or surgical intervention only when the ultrasound suggests a complex cyst or tumor. Both hemodialysis and peritoneal dialysis have been associated with an equivalent incidence of ARCD, and there is no evidence that conversion from one form of dialysis to another influences this disease.

Glassberg KI: Renal dysplasia and cystic disease of the kidney, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1757-1813.

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The bladder neoplasm arising from remnants of the allantoic duct is:

A adenocarcinoma.

B inverted papilloma.

C nephrogenic adenoma.

D squamous carcinoma.

E rhabdomyosarcoma.

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A adenocarcinoma.

B inverted papilloma.

C nephrogenic adenoma.

D squamous carcinoma.

E rhabdomyosarcoma.

The bladder neoplasm arising from remnants of the allantoic duct is:

A: "adenocarcinoma." is correct.

Adenocarcinomas may arise from the remnant of allantoic duct (urachus), in exstrophic bladders, and among patients with uretero-intestinal diversion.

Messing EM, Catalona WJ: Urothelial tumors of the urinary tract, Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2344-2345.

Abnormalities of chromosome 3p (short arm of chromosome 3) are associated with:

A oncocytoma.

B clear cell renal cell carcinoma.

C acquired renal cystic disease.

D transitional cell carcinoma.

E papillary renal cell carcinoma.

Abnormalities of chromosome 3p (short arm of chromosome 3) are associated with:

B: "clear cell renal cell carcinoma." is correct.

The most consistent cytogenetic abnormality identified in renal cell carcinoma are deletions and translocations involving the short arm of chromosome 3 (3p). This is now recognized as the genetic aberration associated with Von Hippel-Lindau disease. This abnormality, however, is primarily associated with clear cell, granular and sarcomatoid renal cell carcinoma, but not papillary carcinoma, oncocytoma, or angiomyolipoma. It is not associated with any cystic disease except that observed in VHL disease.

Belldegrun A, deKernion JB: Renal Tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 2293.

A 62-year-old man has a squamous cell carcinoma of the penis with distant metastases. The most effective drug combination is:

A cyclophosphamide and methotrexate.

B doxorubicin and cisplatin.

C actinomycin and vincristine.

D bleomycin and cisplatin.

E mitomycin and cisplatin.

A 62-year-old man has a squamous cell carcinoma of the penis with distant metastases. The most effective drug combination is:

D: "bleomycin and cisplatin." is correct.

Of the combinations of agents listed, the most active for squamous cell carcinoma of the penis are bleomycin and cisplatin. While responses in the 15-25% range have been reported, most are of short duration.

Kattan J, Culine S, Droz JP, et al: Penile cancer chemotherapy: Twelve years' experience at Institut Gustave-Roussy. UROL 1993;42:559-62.

Germiyanoglu C, Horasanli K, Erol D, Altug U: Treatment of clinically fixed lymph node metastases from carcinoma of the penis by chemotherapy and surgery. INTERNAT UROL & NEPHR 1993;25:475-478.

The characteristic that distinguishes primary hypoadrenalism from secondary (pituitary) hypoadrenalism is:

A hypotension.

B metabolic alkalosis.

C cutaneous hyperpigmentation.

D hypernatremia.

E hyperkalemia.

A 62-year-old man has a squamous cell carcinoma of the penis with distant metastases. The most effective drug combination is:

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The characteristic that distinguishes primary hypoadrenalism from secondary (pituitary) hypoadrenalism is:

A hypotension.

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C cutaneous hyperpigmentation.

D hypernatremia.

E hyperkalemia.

The characteristic that distinguishes primary hypoadrenalism from secondary (pituitary) hypoadrenalism is:

C: "cutaneous hyperpigmentation." is correct.

Since the amino acids of ACTH are identical to the terminal amino acids of melanocyte stimulating hormone (MSH), over-production of ACTH results in cutaneous hyperpigmentation. Adrenal loss results in lack of negative feedback and over-production of ACTH. Pituitary failure, on the other hand, results in a lack of ACTH.

Orth DN, Kovacs WJ, DeBold CR: The adrenal cortex, in Wilson JD, Foster DW (eds): WILLIAMS TEXTBOOK OF ENDOCRINOLOGY. Philadelphia, WB Saunders Co, 1992, p 552.

A six-year-old girl with recurrent symptomatic UTIs has a normal renal ultrasound. A VCUG is shown (see figure). The best management is:

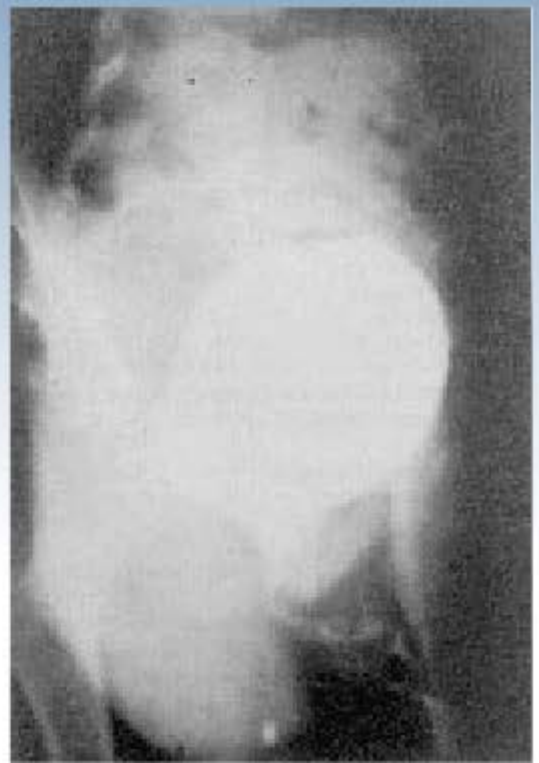
A antibacterial therapy.

B urethral meatotomy.

C internal urethrotomy.

D single urethral dilation.

E repeated urethral dilations.



A six-year-old girl with recurrent symptomatic UTIs has a normal renal ultrasound. A VCUG is shown (see figure). The best management is:

A: "antibacterial therapy." is correct.

The VCUG is normal. Formerly, a dilated urethra proximal to the meatus in a voiding cystogram in a female was thought to represent distal urethral stenosis. However, on another frame of this voiding cystogram, as is commonly seen, the urethra is of uniform caliber from the bladder neck to the urethral meatus. In addition, no correlation exists between the size of the urethral meatus, the radiographic picture, and the incidence of urinary infection in girls. Controlled studies have shown that instrumentation, whether it be by meatotomy, internal urethrotomy or urethral dilation, has no effect on the recurrence rate of urinary infections. Therefore, the correct answer is antibacterial therapy which may be aided by a timed-voiding regimen.

Rushton HG: Nonspecific infections, in Kelalis PP, King LR, Belman AB (eds): CLINICAL PEDIATRIC UROLOGY, ed 3. Philadelphia, WB Saunders Co, 1992, p 318.

Seminal emission depends on an intact:

A parasympathetic and somatic nervous systems.

B sympathetic nervous system.

C parasympathetic nervous system.

D sympathetic and parasympathetic nervous systems.

E sympathetic and somatic nervous systems.

Seminal emission depends on an intact:

B: "sympathetic nervous system." is correct.

Emission is defined as the deposition of seminal fluid into the posterior urethra by the vasa deferentia and the seminal vesicles. Ejaculation is the forceful expulsion of seminal fluid out the urethral meatus by contraction of the bulbocavernosus and ischiocavernosus muscles. Since the vasa and the seminal vesicles are innervated primarily by the sympathetic nervous system, emission is under control of the sympathetic nervous system. Alpha-adrenergic nerve stimulation causes not only contraction of the seminal vesicles and vasa deferentia but also closure of the bladder neck. Ejaculation is the result of somatic nerve stimulation of the periurethral striated musculature. The parasympathetic nervous system is not directly involved with either emission or ejaculation.

Benson GS, McConnell JA: Erection, emission, and ejaculation: Physiologic mechanisms, in Lipshultz LI, Howards SS (eds): INFERTILITY IN THE MALE, ed 2. St Louis, Mosby Year Book, 1991, pp 166-172.

A four-year-old girl has a left flank mass and hematuria. Her hematocrit is 50%. The most likely diagnosis is:

A renal vein thrombosis.

B angiomyolipoma.

C Wilms' tumor.

D hydronephrosis.

E polycystic kidney disease.

A four-year-old girl has a left flank mass and hematuria. Her hematocrit is 50%. The most likely diagnosis is:

C: "Wilms' tumor." is correct.

Wilms' tumor may produce erythropoietin in a manner similar to renal cell carcinoma and hence may manifest erythrocytosis. At this age, Wilms' tumor is more likely than renal cell carcinoma. Renal vein thrombosis is rare in this age group but would most likely present with pain, hematuria or proteinuria without erythrocytosis. Hydronephrosis, polycystic disease and tuberous sclerosis are not usually associated with erythrocytosis.

Coppes MJ: Serum biological markers and paraneoplastic syndromes in Wilms' tumor. MED PED ONCOL 1993;21:213.

While resecting the left lobe of the prostate during a TURP, a large capsular perforation with venous bleeding is noted. Despite spinal anesthesia the patient notes abdominal pain. The best management is:

A complete the TURP.

B serum sodium determination before completing the procedure.

C convert to open prostatectomy.

D stop procedure and place a urethral catheter.

E change to an electrovaporization technique.

While resecting the left lobe of the prostate during a TURP, a large capsular perforation with venous bleeding is noted. Despite spinal anesthesia the patient notes abdominal pain. The best management is:

D: "stop procedure and place a urethral catheter." is correct.

Extravasation or perforation of the capsule complicates 2% of all TURP'S. Patients may experience abdominal pain, back pain, and nausea or vomiting, even during spinal anesthesia. Bleeding should be controlled as best as possible. The majority of these patients can be managed by urethral catheter drainage and cessation of the operation.

Mebust WK: Transurethral surgery, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1517-1519.

A two-year-old boy undergoes a left inguinal exploration for a nonpalpable left testis. At the internal ring, a vas deferens is noted to end blindly. The best next step is:

A close.

B perform laparoscopy.

C explore peritoneal cavity.

D explore the retroperitoneum.

E close, then obtain a CT scan.

A two-year-old boy undergoes a left inguinal exploration for a nonpalpable left testis. At the internal ring, a vas deferens is noted to end blindly. The best next step is:

C: "explore peritoneal cavity." is correct.

Although suggestive of the absence of the testis, the finding of a blind-ending vas deferens does not prove this. Proof comes with the exploration of the spermatic vessels which is best done with an intraabdominal exploration. Laparoscopy would not be practical in this patient since the groin is already open. In this clinical setting, the incision could be extended superiorly and the peritoneal cavity entered at the level of the internal ring. If the testis is absent, the vessels can often be traced to the point of the blind-ending vas. If the testis is present, it will be found higher in the abdominal cavity even though it is truly a retroperitoneal structure.

Kogan SJ, Hadziselimovic F, Howards SS, Snyder HM III, et al: Pediatric andrology, in Gillenwater JY, Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY, ed 3. St. Louis, Mosby Year Book, 1996, pp 2660-2661.

A 57-year-old man undergoes a left radical nephrectomy for renal cell cancer. Postoperatively, he has a prolonged ileus with nausea and vomiting and persistent abdominal pain radiating to the back. There is serous drainage from the wound. Abdominal ultrasound shows a retroperitoneal fluid collection. The next step should be:

A analysis of wound fluid for pH and amylase.

B analysis of wound fluid for creatinine and BUN.

C surgical exploration and drainage.

D gastrografin small bowel series.

E gallium scan.

A 57-year-old man undergoes a left radical nephrectomy for renal cell cancer. Postoperatively, he has a prolonged ileus with nausea and vomiting and persistent abdominal pain radiating to the back. There is serous drainage from the wound. Abdominal ultrasound shows a retroperitoneal fluid collection. The next step should be:

A: "analysis of wound fluid for pH and amylase." is correct.

An unrecognized injury to the pancreas may result in a pancreatic fistula. These are usually accompanied by symptoms of pancreatitis with wound drainage of fluid with high pH and amylase content. Radiologic studies will usually show fluid in the retroperitoneum. When drained adequately, the tract will usually heal spontaneously, but hyperalimentation may be required.

Yeo CJ: Pancreatic pseudocysts, ascites, and fistulas. CURR OPINION GEN SURG 1994;4:173-178.

A 25-year-old man with carcinoma of the testis has undergone treatment with chemotherapy including bleomycin. He now requires lower abdominal surgery. The study most important in selecting general or regional anesthesia is:

A SGOT, SGPT, LDH.

B BUN, serum creatinine.

C expiratory spirometry.

D electrocardiography.

E complete blood count.

A 25-year-old man with carcinoma of the testis has undergone treatment with chemotherapy including bleomycin. He now requires lower abdominal surgery. The study most important in selecting general or regional anesthesia is:

C: "expiratory spirometry." is correct.

In 1978, Nygaard and associates reported on the death of 4/8 patients having an esophageal resection six weeks after bleomycin and radiation therapy. Subsequently, Goldiner reported five deaths in 100 patients who received bleomycin prior to surgery. High oxygen concentration was implicated as the cause of respiratory failure, along with increased amounts of crystalloid. The only difference noted in Goldiner's patients who died was impairment of pulmonary function tests compared with normal pulmonary function in the patients who survived. It has been suggested that abnormal pulmonary function, demonstrated by expiratory spirometry or formal pulmonary function tests, should be performed in every patient who is contemplating general anesthesia following bleomycin-containing chemotherapy.

Goldiner PL, Carlon GC, Cvitkovic E, et al: Factors influencing postoperative morbidity and mortality in patients treated with bleomycin. BRI MED J 1978;1:1664.

Richie JP: Neoplasms of the testis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2436-2437.

A 54-year-old woman has severe pain in the suprapubic region and pain with adduction of her legs two weeks after a Marshall-Marchetti- Krantz bladder neck suspension. She has a "waddling" gait and the pain is reproduced by pressure on her pubic region. The study most likely to confirm the etiology of her pain is:

A. CT scan of pelvis.

B. plain x-ray of pelvis.

C. cystoscopy.

D. MRI scan of lumbosacral spine.

E. radionuclide bone scan.

A 54-year-old woman has severe pain in the suprapubic region and pain with adduction of her legs two weeks after a Marshall-Marchetti- Krantz bladder neck suspension. She has a "waddling" gait and the pain is reproduced by pressure on her pubic region. The study most likely to confirm the etiology of her pain is:

E: "radionuclide bone scan." is correct.

Osteitis pubis is a poorly understood non-infectious inflammatory condition that may complicate up to 2.5% of all Marshall-Marchetti-Krantz procedures. It has been reported after transurethral collagen injections, transrectal prostate biopsy, TURP, radical prostatectomy, cryotherapy of the prostate and other urological procedures. Exclusion of an infectious osteomyelitis must be considered, and radiographic findings are often not found early in the process. Radionuclide bone scan is an effective approach to early diagnosis.

Lentz SS: Osteitis pubis: A review. OBSTET GYN SURV 1995;Apr;50(4):310-5.

Mainprize TC, Drutz HP: The Marshall-Marchetti-Krantz procedure: A critical review. OBSTET GYN SURV 1988;Dec;43(12):724-729.

Briggs RC, Kolbjornsen PH, Southall RC: Osteitis pubis, Tc-99m MDP, and professional hockey players. CLIN NUCL MED 1992;Nov;17(11):861-3.

Thiazide diuretics are:

A useful in treating hypercalcemia.

B contraindicated in calcium nephrolithiasis.

C specifically indicated in idiopathic hypercalciuria.

D inhibitors of sodium and chloride reabsorption in the collecting duct.

E able to increase both renal blood flow and GFR.

Thiazide diuretics are:

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C specifically indicated in idiopathic hypercalciuria.

D inhibitors of sodium and chloride reabsorption in the collecting duct.

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Thiazide diuretics are:

C: "specifically indicated in idiopathic hypercalciuria." is correct.

Thiazide diuretics are able to diminish blood volume acutely by inhibiting sodium and chloride reabsorption at the distal convoluted tubule and thus diminish both renal blood flow and glomerular filtration rate. Thiazide diuretics are indicated in patients with calcium nephrolithiasis because they decrease urinary calcium. In nephrogenic and partial pituitary diabetes insipidus, thiazides produce an antidiuresis due to the sodium-depleting effects, causing a contraction of the extracellular fluid volume with less delivery of filtrate to the distal nephron. Furosemide, not thiazides, is useful in treating hypercalcemia.

Jenkins AD: Calculus Formation, in Gillenwater JY, Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY, ed 3. Philadelphia, Mosby Year Book, 1996, p 490.

The most important factor responsible for the frequent recurrence of UTIs in an otherwise healthy, young woman is:

A adhesive fimbriae of uropathogens.

B specific receptors on urothelial cells.

C presence of pathogenic coliforms in stool.

D feminine hygiene practices.

E method of contraception.

The most important factor responsible for the frequent recurrence of UTIs in an otherwise healthy, young woman is:

B: "specific receptors on urothelial cells." is correct.

Properties of uropathogens, sexual activity, feminine hygiene practices and the use of an IUD and/or spermicide may increase the frequency of UTIs in predisposed women, however they are not the most important etiologic factors. Many women have uropathogenic bacteria present in their bowel, use various contraceptive and hygiene methods, and are sexually active without developing infections. E. coli must colonize the peri-urethral area before an uncomplicated infection can occur. Coliform organisms are recovered only rarely from the region of the vaginal vestibule and external urethra in otherwise healthy women who do not have recurrent UTIs. It is postulated by most researchers that host factors rather than specific pathogenicity of the micro-organisms are the prime determinants of colonization. E. coli tend to adhere more to vaginal and buccal epithelial cells obtained from women with recurrent infection than to controls. This explains why certain women are prone to frequent recurrent infections. It would also explain why women with asymptomatic bacteruria are more prone to recurrent infection with marriage and pregnancy and would account for UTIs associated with intercourse, various contraceptive methods, etc., in highly susceptible women.

Kunin CM: URINARY TRACT INFECTIONS: DETECTION, PREVENTION AND MANAGEMENT, ed 5. Baltimore, Williams & Wilkins, 1997, pp 334-362.

CONTINUE

A 65-year-old man with metastatic prostate cancer is treated with an LH- RH agonist. Two years later, he has a worsening bone scan, retroperitoneal adenopathy, and a PSA level of 500 ng/ml. The plasma testosterone is 30 ng/dl (normal 300- 800 ng/dl). The therapy most likely to provide objective tumor regression is:

A chemotherapy.

B bilateral orchiectomy.

C addition of an antiandrogen.

D strontium-89.

E prednisone.

A 65-year-old man with metastatic prostate cancer is treated with an LH- RH agonist. Two years later, he has a worsening bone scan, retroperitoneal adenopathy, and a PSA level of 500 ng/ml. The plasma testosterone is 30 ng/dl (normal 300- 800 ng/dl). The therapy most likely to provide objective tumor regression is:

A: "chemotherapy." is correct.

Although there are few long-term complete responses using chemotherapy in patients with hormone refractory prostate cancer, objective responses with PSA reductions are found in approximately 50% to 70% of patients treated with estramustine and Vinblastine or mitozanthrone. Bilateral orchiectomy is of little value in a patient with castrate levels of testosterone. Addition of an anti-androgen in this situation can decrease the serum PSA level temporarily, but is less effective than chemotherapy. Strontium is effective for symptomatic control of bone pain. Steroids occasionally can be useful but usually only if combined with some other therapy such as Suramin or ketoconazole.

Hudes G: Estramustine-based chemotherapy. SEM UROL ONC 1997;15:13-19.

A 62-year-old man has new onset bilateral hydronephrosis four years after radical cystectomy and ileal conduit for bladder cancer. Upon catheterizing the stoma, 100 cc of urine is obtained. The most likely cause of the hydronephrosis is:

A stomal stenosis.

B chronic ureteral reflux.

C ureteral obstruction due to recurrent cancer.

D ureteral obstruction due to fibrosis.

E antiperistaltic orientation of conduit.

A 62-year-old man has new onset bilateral hydronephrosis four years after radical cystectomy and ileal conduit for bladder cancer. Upon catheterizing the stoma, 100 cc of urine is obtained. The most likely cause of the hydronephrosis is:

A: "stomal stenosis." is correct.

Stomal stenosis is one of the most common long-term complications of ileal conduit diversion. Outlet stenosis leads to increased residual urine and high pressure in the conduit which is transmitted across refluxing ureters to the upper tracts resulting in hydronephrosis and upper tract deterioration. Neither recurrent cancer nor simple postoperative fibrosis are likely to appear suddenly four years after surgery. Chronically ischemic conduits have small volumes and would not retain a residual of 100 cc of urine. Urodynamic studies will show high pressure in the conduits.

Neal DE: Urodynamic investigation of the ileal conduit: Upper tract dilation and the effects of revision of the conduit. J UROL 1989;142:97-100.

McDougal WS: Use of intestinal segments and urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 3137.

A 26-year-old infertile body builder with a five- year history of heavy anabolic steroid use is azoospermic 12 months after discontinuing all steroids. His serum testosterone is 150 ng/dl (normal 300- 900), and FSH is normal. The next step is:

A observation.

B testosterone replacement.

C hCG.

D testicular biopsy.

E clomiphene citrate.

A 26-year-old infertile body builder with a five- year history of heavy anabolic steroid use is azoospermic 12 months after discontinuing all steroids. His serum testosterone is 150 ng/dl (normal 300- 900), and FSH is normal. The next step is:

C: "hCG." is correct.

The non-medical use of anabolic steroids by athletes is a potentially significant cause of infertility in male adolescents and adults. It has been estimated that 3-12% of male athletes of high school age in the United States have used steroids. Infertility associated with anabolic steroid use commonly presents as oligospermia and azoospermia along with abnormalities of sperm motility and morphology. As with many of the other steroid side effects the semen parameter deficits are thought to be reversible and consequently the discontinuation of all steroids is an appropriate first course of therapy. In athletes who have been on chronic anabolic steroids, doubt had been cast on the theory that the endocrine imbalance induced by long-term metabolic steroids is reversible. Successful gonadotropin replacement is the best initial therapy for this particular patient.

Turek PJ, Williams RH, Gilbaugh JH III, Lipshultz LI: The reversibility of anabolic steroid-induced azoospermia. J UROL 1995;153:1628-30.

A 58-year-old man with recurrent superficial bladder tumors previously treated with intravesical BCG is evaluated for a positive voided cytology. Cystoscopy discloses no intravesical tumors, random bladder biopsies are negative, and bilateral retrograde pyelograms and upper tract cytologies are normal. The next step is:

A CT scan.

B ureteroscopy.

C repeat BCG.

D prostatic urethral biopsy.

E urinary NMP level.

A 58-year-old man with recurrent superficial bladder tumors previously treated with intravesical BCG is evaluated for a positive voided cytology. Cystoscopy discloses no intravesical tumors, random bladder biopsies are negative, and bilateral retrograde pyelograms and upper tract cytologies are normal. The next step is:

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E urinary NMP level.

A 58-year-old man with recurrent superficial bladder tumors previously treated with intravesical BCG is evaluated for a positive voided cytology. Cystoscopy discloses no intravesical tumors, random bladder biopsies are negative, and bilateral retrograde pyelograms and upper tract cytologies are normal. The next step is:

D: "prostatic urethral biopsy." is correct.

A positive cytology after BCG therapy with a visually and biopsy negative bladder usually indicates extravesical recurrence either in the upper tracts or prostate. Thorough evaluation of both sites is indicated in this patient. Neither a CT scan nor ureteroscopy is indicated or would be helpful since the retrograde pyelograms and upper tract cytologies are normal. Repeat BCG is not indicated unless there is documented evidence of tumor recurrence. A urinary NMP level is not helpful since a voided cytology is already positive, and in any event will not help localize the tumor. Of the choices listed, prostate biopsy is the best choice to assess for the presence of prostatic TCC.

Schwalb MD, Herr HW, Sogani PC, Russo P, et al: Positive urinary cytology following a complete response to intravesical bacillus Calmette-Guerin therapy: Pattern of recurrence. J UROL 1994;152:382.

Schwalb MD, Herr HW, Fair WR: The management of clinically unconfirmed positive urinary cytology. J UROL 1993;150:1751.

The bacterial virulence factor present in most pyelonephritogenic strains of E. coli is:

A aerobactin.

B hemolysin.

C O-antigen.

D K-antigen.

E P-fimbria.

The bacterial virulence factor present in most pyelonephritogenic strains of E. coli is:

E: "P-fimbria." is correct.

The two most important markers for E. coli virulence are mannose-resistant hemagglutination (MRHA) of human red blood cells and P blood group-specific adhesions (P -fimbriae). The p-fimbria on the bacterial surface allow the bacteria to adhere to urothelial cells. This adherence aids the ascent of the bacteria to the upper urinary tract.

Shortliffe LMD: Urinary tract infections in infants and children, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 1682.

A 12-year-old girl with spina bifida and an ileal conduit undergoes ileocecal continent diversion. She has persistent fecal incontinence with watery diarrhea six months after surgery. The best treatment is:

A cholestyramine.

B Vitamin B-12.

C Lomotil.

D oxybutynin.

E Imodium.

A 12-year-old girl with spina bifida and an ileal conduit undergoes ileocecal continent diversion. She has persistent fecal incontinence with watery diarrhea six months after surgery. The best treatment is:

A: "cholestyramine." is correct.

Diarrhea after ileocecal resection is usually related to loss of the ileocecal valve and is a self-limited process that resolves in a few months. Severe and persisting diarrhea after ileocecal resection is a very uncommon complication, which may be related to bile acid metabolism.

Three types of bile acid-related diarrhea are described. Type I is due to anatomically-defined ileal pathology. Type II is due to bile acid malabsorption, with an anatomically normal ileum. Type III is related to previous cholecystectomy or other gastrointestinal alteration. Cholestryramine, a non-absorbable anion exchange resin, is effective in treating bile acid-related diarrhea.

Rink RC, Adams MC: Augmentation cystoplasty, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 3177.

A pelvic CT scan in a 34-year-old woman with recurrent UTIs reveals air in the bladder, focal bladder wall thickening, and indentation of the right lateral bladder wall. The most likely diagnosis is:

A carcinoma of the sigmoid colon.

B Crohn's disease.

C carcinoma of the bladder.

D diverticulitis.

E emphysematous cystitis.

A pelvic CT scan in a 34-year-old woman with recurrent UTIs reveals air in the bladder, focal bladder wall thickening, and indentation of the right lateral bladder wall. The most likely diagnosis is:

B: "Crohn's disease." is correct.

This patient has an enterovesical fistula due to Crohn's disease. In this disorder, the bladder is indented on the right lateral and/or anterior aspect and gas can be seen in the bladder in 90% of cases on CT scan. Carcinoma of the sigmoid colon could cause this picture but the left wall of the bladder would be indented. Carcinoma of the bladder rarely causes enterovesical fistulae. Emphysematous cystitis is a generalized disease involving the entire bladder wall. She is young to have clinically significant diverticulitis.

Marshall FF: Surgery of the bladder, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 3295.

The most common primary malignant testis tumor of germinal origin in children is:

A teratoma.

B seminoma.

C yolk sac tumor.

D Leydig cell tumor.

E teratocarcinoma.

The most common primary malignant testis tumor of germinal origin in children is:

C: "yolk sac tumor." is correct.

Yolk sac tumor accounts for approximately 60% of prepubertal testis tumors. Leydig cell tumors are of stromal origin.

Kay R: Prepubertal testicular tumor registry. J UROL 1993;150:671-674.

A 46-year-old woman has a six-year history of medically-controlled hypertension. An abdominal bruit and microscopic hematuria are noted on physical exam and urinalysis, respectively. IVP and cystoscopy are normal. Arteriography reveals a cirsoid arteriovenous malformation with multiple small channels in the upper pole of the right kidney. The R/L renal vein renin ratio is 1.4:1. The best management is:

A antihypertensive therapy.

B embolization.

C angioplasty.

D partial nephrectomy.

E nephrectomy.

A 46-year-old woman has a six-year history of medically-controlled hypertension. An abdominal bruit and microscopic hematuria are noted on physical exam and urinalysis, respectively. IVP and cystoscopy are normal. Arteriography reveals a cirsoid arteriovenous malformation with multiple small channels in the upper pole of the right kidney. The R/L renal vein renin ratio is 1.4:1. The best management is:

A: "antihypertensive therapy." is correct.

Hypertension and hematuria are the most common symptoms of congenital arteriovenous malformations. The natural history of this disease is variable. Significant hematuria or hypertension with lateralizing renal vein renins are indications for surgical or percutaneous therapy. However, patients with microscopic hematuria or controlled hypertension can be treated conservatively.

Regan JB, Benson RC: Congenital renal arteriovenous malformations. J UROL 1986;136:1184-1186.

Bauer SB: Anomalies of the kidney and ureteropelvic junction, Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 1734.

The spread of urinary extravasation secondary to urethral injury below the urogenital diaphragm, when associated with a tear in Buck's fascia, is limited by the fasciae of:

A Denonvilliers' and Colles'.

B Colles' and Scarpa's.

C Scarpa's and Denonvilliers'.

D dartos and Colles'.

E dartos and Denonvilliers'.

The spread of urinary extravasation secondary to urethral injury below the urogenital diaphragm, when associated with a tear in Buck's fascia, is limited by the fasciae of:

B: "Colles' and Scarpa's." is correct.

When infradiaphragmatic urinary extravasation extends through Buck's fascia, it is limited only by Colles' fascia which attaches posteriorly at the triangular ligament and laterally at the fascia lata of the thigh. Colles' fascia is continuous anteriorly with Scarpa's fascia which extends superiorly to the coracoclavicular fascia. Therefore, both Colles' and Scarpa's fascia limit such an extravasation. Such an extravasation, particularly when associated with infection (periurethral phlegmon), can result in edema and necrosis of the skin of the penis, scrotum, and anterior body wall.

Sagalowsky AI, Peters PC: Genitourinary trauma, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 3108.

The initial nephrostomy tube puncture site in a horseshoe kidney compared to that in a normally positioned kidney is more:

A medial and through a posterior calyx.

B lateral and through an anterior calyx.

C medial and through an anterior calyx.

D lateral and through a posterior calyx.

E inferior and through an anterior calyx.

The initial nephrostomy tube puncture site in a horseshoe kidney compared to that in a normally positioned kidney is more:

A: "medial and through a posterior calyx." is correct.

Horseshoe kidneys often contain calculi, possibly as a result of high insertion of the ureter and relative stasis of urine. Patients with small, nonobstructing calculi in nondependent locations may be treated with ESWL. However, obstructing calculi or those that are large or in dependent locations are best treated with percutaneous techniques. The initial puncture is more medial than that for normally positioned kidneys and should be placed through a posterior calyx.

Motola JA, Smith AD: Therapeutic options for the management of upper tract calculi. UROL CLIN N AM 1990;17:191-206.

The most important feature in predicting hydronephrosis in patients with myelodysplasia is:

A. significant vesicoureteral reflux.

B. detrusor hyperreflexia.

C. decreased detrusor compliance.

D. leak point pressure > 40 cm of water.

E. dyssynergic external sphincter.

The most important feature in predicting hydronephrosis in patients with myelodysplasia is:

A. significant vesicoureteral reflux.

B. detrusor hyperreflexia.

C. decreased detrusor compliance.

D. leak point pressure > 40 cm of water.

E. dyssynergic external sphincter.

The most important feature in predicting hydronephrosis in patients with myelodysplasia is:

D: "leak point pressure > 40 cm of water." is correct.

While all of the factors listed can produce hydronephrosis, a leak pressure of > 40 cm of water, if left untreated, has uniformly been associated with progressive hydronephrosis. Patients with an elevated leak pressure should be treated aggressively with clean intermittent catheterization and anticholinergics or vesicostomy to prevent hydronephrosis.

Galloway NTM: Objective score to predict upper tract deterioration and myelodysplasia. J UROL 1991;145:535-537.

The most prominent pharmacologic effect of imipramine on the lower urinary tract is:

A central nervous system excitation.

B direct smooth muscle inhibition.

C alpha-adrenergic blockade.

D blockade of norepinephrine synthesis.

E opioid antagonism.

The most prominent pharmacologic effect of imipramine on the lower urinary tract is:

B: "direct smooth muscle inhibition." is correct.

Imipramine's most prominent effect is direct smooth muscle inhibition. It also has a systemic anticholinergic effect, but this is not as clinically significant on the bladder as its direct relaxant effect. Imipramine also causes blockade of norepinephrine re-uptake and this explains its alpha-adrenergic effect on the bladder neck.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 953-1006.

A 47-year-old man has biopsy-proven squamous cell carcinoma invading the glans penis. Both groins are clinically negative. Initial treatment should be:

A wide local excision.

B distal penile amputation.

C wide local excision and bilateral superficial and deep groin dissection.

D distal penile amputation and bilateral superficial and deep groin dissection.

E wide local excision and external radiation to both groins.

A 47-year-old man has biopsy-proven squamous cell carcinoma invading the glans penis. Both groins are clinically negative. Initial treatment should be:

B: "distal penile amputation." is correct.

The most important initial mission of therapy of squamous cell carcinoma of the penis is adequate treatment of the primary lesion. This can be accomplished in this patient, achieving 2 cm margins of excision, by distal penectomy. In addition to excellent control of the primary lesion, pathologic evaluation of the lesion will allow a more informed decision as to the necessity and extent of surgical therapy of potentially involved nodal groups.

Thompson IM, Fair WR: Penile carcinoma. AUA UPDATE SERIES 1990, vol 9, lesson 1.

A 47-year-old man has biopsy-proven squamous cell carcinoma invading the glans penis. Both groins are clinically negative. Initial treatment should be:

B: "distal penile amputation." is correct.

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Thompson IM, Fair WR: Penile carcinoma. AUA UPDATE SERIES 1990, vol 9, lesson 1.

A seven-year-old girl has urgency, frequency, and diurnal enuresis. She is wet every day requiring clothes changes twice daily. Physical exam and urinalysis are normal. She is placed on oxybutynin 5 mg BID and timed voiding. She returns two weeks later and reports no change in the diurnal enuresis. The next step is:

A. MRI scan of the lumbosacral spine.

B. imipramine 25 mg BID.

C. videourodynamics.

D. voiding diary.

E. urethral dilation.

A seven-year-old girl has urgency, frequency, and diurnal enuresis. She is wet every day requiring clothes changes twice daily. Physical exam and urinalysis are normal. She is placed on oxybutynin 5 mg BID and timed voiding. She returns two weeks later and reports no change in the diurnal enuresis. The next step is:

D: "voiding diary." is correct.

Diurnal enuresis occurs in 5% of seven-year-old school age children. In most children, the underlying problem is infrequent voiding. Timed voiding programs alone will be successful in the majority of children but require several months to be effective. This child has not had enough time to determine if the program will be effective. Changing to another medication or proceeding with urodynamic evaluation at this time is premature. Urethral dilation is not indicated for the treatment of enuresis. Some authors have suggested that an occult tethered cord is responsible for persistent diurnal enuresis. However, imaging of the spine should be reserved for those children with significant abnormalities on neurologic exam or urodynamic evaluation.

Bloom DA, Faerber G, Bomalaski MD: Urinary incontinence in girls. Evaluation, treatment, and its place in the standard model of voiding dysfunctions in children. UROL CLIN N AM 1995;22(3):521-538.

Ritchey M, Sinha A, DiPietro MA, et al: Significance of spina bifida occulta in children with diurnal enuresis. J UROL 1994;152:815-818.

The treatment for urethral prolapse which results in the greatest success and lowest recurrence or complication rate is:

A surgical excision.

B suture-around-a-catheter technique.

C cryosurgery.

D vaginourethral plication.

E topical estrogen application.

The treatment for urethral prolapse which results in the greatest success and lowest recurrence or complication rate is:

A surgical excision.

B suture-around-a-catheter technique.

C cryosurgery.

D vaginourethral plication.

E topical estrogen application.

The treatment for urethral prolapse which results in the greatest success and lowest recurrence or complication rate is:

A: "surgical excision." is correct.

Recurrence of urethral prolapse is highest with medical management. Urethral stricture, prolonged pain, or technical difficulty is associated with all except simple surgical excision or reduction, which is the most efficient form of management. The problem is most frequently seen in older women and young black girls.

Baskin LS, Kogan BA: Urethral anomalies and obstruction, in King LR (ed): UROLOGIC SURGERY IN INFANTS AND CHILDREN. Philadelphia, WB Saunders Co, 1998, pp 220-221.

A 23-year-old man with AIDS has a three- day history of painful right testicular swelling. The testis is diffusely swollen with a hard lesion in the upper pole. After two weeks of oral antibiotic therapy, the tenderness has resolved but the mass persists. Ultrasound of the scrotum shows a 1.5 cm mixed echogenic mass in the right testicle and a normal left testicle. Serum tumor markers and abdominal CT scan are normal. The next step is:

A inguinal orchiectomy.

B continue antibiotics and re-evaluate in two weeks.

C PPD skin test.

D scrotal exploration.

E aspirate mass for culture.

A 23-year-old man with AIDS has a three- day history of painful right testicular swelling. The testis is diffusely swollen with a hard lesion in the upper pole. After two weeks of oral antibiotic therapy, the tenderness has resolved but the mass persists. Ultrasound of the scrotum shows a 1.5 cm mixed echogenic mass in the right testicle and a normal left testicle. Serum tumor markers and abdominal CT scan are normal. The next step is:

A: "inguinal orchiectomy." is correct.

Patients with the acquired immunodeficiency syndrome are at risk for various genitourinary infections and initial treatment of this patient with antibiotics is appropriate. However, these patients may be at greater risk for testicular tumors and the presence of an intraparenchymal testicular mass merits inguinal exploration.

Richie JP: Neoplasms of the testis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 2411.

A 50-year-old African American woman has passed multiple calcium oxalate dihydrate stones. After initiating medical management with allopurinol and potassium citrate, repeat metabolic evaluation demonstrates serum calcium of 13.4 mg/dl, phosphorus 3.7 mg/dl, PTH 38 pg/dl (normal < 65 pg/dl), and urinary calcium of 598 mg per day (normal < 250 mg/day). The next step is:

A neck exploration.

B abdominal CT scan.

C calcium load test.

D chest CT scan.

E fasting urinary calcium.

A 50-year-old African American woman has passed multiple calcium oxalate dihydrate stones. After initiating medical management with allopurinol and potassium citrate, repeat metabolic evaluation demonstrates serum calcium of 13.4 mg/dl, phosphorus 3.7 mg/dl, PTH 38 pg/dl (normal < 65 pg/dl), and urinary calcium of 598 mg per day (normal < 250 mg/day). The next step is:

D: "chest CT scan." is correct.

Calculi may be the initial feature of sarcoidosis in a small percentage of patients. In those individuals who present with hypercalcemia, normal serum phosphate, and normal serum PTH, sarcoidosis should be suspected. Increased Vitamin D levels in these patients will increase the intestinal absorption of calcium and suppress PTH secretion. Steroids will decrease intestinal absorption of calcium and should normalize both hypercalcemia and hypercalciuria.

Rizzato G, Fraioli P, Montemurro L: Nephrolithiasis as a presenting feature of chronic sarcoidosis. THORAX 1995;50:555-559.

Compared to intracavernous injection of papaverine for the treatment of erectile dysfunction, prostaglandin E1 is more likely to cause:

A mild liver function abnormalities.

B pain on injection.

C priapism.

D fibrosis.

E systemic vasodilation.

Compared to intracavernous injection of papaverine for the treatment of erectile dysfunction, prostaglandin E1 is more likely to cause:

B: "pain on injection." is correct.

Other than an increased probability of pain on injection, prostaglandin E1 appears to have fewer complications than papaverine. It is cleared after one pass through the lungs, so that systemic effects are unlikely.

Lue TF, Broderick G: Evaluation and non-surgical management of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1181-1214.

A 38-year-old woman with extensive prior pelvic radiation has a long left distal ureteral stricture. At the time of psoas hitch and ureteral reimplant, an omental wrap is planned. The vascular supply of the omentum is most reliably based upon which artery:

A splenic.

B gastroduodenal.

C right gastroepiploic.

D short gastric.

E left gastroepiploic.

A 38-year-old woman with extensive prior pelvic radiation has a long left distal ureteral stricture. At the time of psoas hitch and ureteral reimplant, an omental wrap is planned. The vascular supply of the omentum is most reliably based upon which artery:

C: "right gastroepiploic." is correct.

The blood supply of the omentum arises from the gastroepiploic arteries. The right gastroepiploic is best chosen for development of the wrap as the left is relatively small and more variable in its anatomy.

Redman JF: Anatomy of the genitourinary system, in Gillenwater GY, Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY. St. Louis, Mosby Year Book, 1991, pp 1-62.

The neoplasm most frequently associated with bladder exstrophy is:

A squamous cell carcinoma.

B transitional cell carcinoma.

C adenocarcinoma.

D rhabdomyosarcoma.

E nephrogenic adenoma.

The neoplasm most frequently associated with bladder exstrophy is:

C: "adenocarcinoma." is correct.

Adenocarcinoma may develop in the untreated exstrophied bladder emphasizing the need for definitive therapy. Development of this type of neoplasm may be related to the differentiation of the bladder from the cloaca.

Messing EM, Catalona WJ: Urothelial tumors of the urinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2327-2394.

A 45-year-old woman has chronic indwelling polyurethane double-J stents for bilateral lower ureteral strictures from radiation therapy for cervical carcinoma. She experiences gross painless hematuria and cystoscopic examination reveals profuse bleeding from the right ureteral orifice. The best management is:

A remove the right stent.

B arteriogram.

C CT scan of the abdomen.

D exchange for softer stent.

E exploratory laparotomy.

A 45-year-old woman has chronic indwelling polyurethane double-J stents for bilateral lower ureteral strictures from radiation therapy for cervical carcinoma. She experiences gross painless hematuria and cystoscopic examination reveals profuse bleeding from the right ureteral orifice. The best management is:

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A 45-year-old woman has chronic indwelling polyurethane double-J stents for bilateral lower ureteral strictures from radiation therapy for cervical carcinoma. She experiences gross painless hematuria and cystoscopic examination reveals profuse bleeding from the right ureteral orifice. The best management is:

B: "arteriogram." is correct.

This clinical scenario should raise serious concerns a uretero-iliac fistula. This has been reported most commonly after the development of radiation-induced stricture disease for gynecologic malignancies and after aortoiliac reconstructive procedures. Arteriography may not be diagnostic, but, if it is, temporary balloon occlusion can be life-saving. Laparotomy would be extremely difficult in most previously irradiated patients.

Cass AS, Odland M: Ureteroarterial fistula: Case report and review of the literature. J UROL 1990;143:582-583.

Quillin SP, Davey MD, Picus D: Angiographic evaluation and therapy of ureteroarterial fistulas. AM J ROENTGENOL 1994;162(4):873-8.

A 45-year-old man with good erectile function has a failed renal transplant in the right iliac fossa with arterial anastomosis to the internal iliac artery. In order to avoid erectile dysfunction, the second allograft should be placed in the:

A left renal fossa, end-end to the splenic artery.

B right renal fossa, end-side to the aorta.

C left iliac fossa, end-side to the external iliac artery.

D left iliac fossa, end-end to the internal iliac artery.

E right iliac fossa after transplant nephrectomy.

A 45-year-old man with good erectile function has a failed renal transplant in the right iliac fossa with arterial anastomosis to the internal iliac artery. In order to avoid erectile dysfunction, the second allograft should be placed in the:

C: "left iliac fossa, end-side to the external iliac artery." is correct.

Many patients report a return to pre-illness levels of sexual activity after transplantation. To avoid erectile dysfunction after retransplantation, the internal iliac artery should not be used if it has been used on the contralateral side or if the surgical technique for the first transplant is unknown. Bilateral internal iliac ligation can cause erectile dysfunction due to vascular insufficiency. It is best to use the contralateral iliac fossa with an end-side anastomosis to the external iliac artery.

Benson GS, Boileau MA: The penis: Sexual function and dysfunction, in Gillenwater JY, Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY, ed 3. St. Louis, Mosby Yearbook Co, 1996, pp 1951-1995.

A 58-year-old man has frequency and nocturia, an AUA Symptom Score of 22, peak urinary flow rate of 8 ml/sec, and postvoid residual of 200 ml. The prostate is 70 gm with a prominent median lobe. Sitting systolic blood pressure is 140 mm Hg. An orthostatic blood pressure change of 25 mm Hg is not associated with postural symptoms. He is concerned about developing ejaculatory dysfunction. The best treatment is:

A finasteride.

B doxazosin.

C TUIP.

D transurethral vaporization of the prostate.

E TUMT.

A 58-year-old man has frequency and nocturia, an AUA Symptom Score of 22, peak urinary flow rate of 8 ml/sec, and postvoid residual of 200 ml. The prostate is 70 gm with a prominent median lobe. Sitting systolic blood pressure is 140 mm Hg. An orthostatic blood pressure change of 25 mm Hg is not associated with postural symptoms. He is concerned about developing ejaculatory dysfunction. The best treatment is:

B: "doxazosin." is correct.

Orthostatic hypotension is not a contraindication for alpha-blockers providing the blood pressure change is not associated with postural symptoms. The effectiveness of alpha-blockers is independent of prostate size. In those subjects with very large prostates, alpha-blockers are more effective than 5-alpha-reductase inhibitors. All surgical interventions may cause retrograde ejaculation.

Lepor H: Natural history: Evaluation and non-surgical management of BPH, in Walsh PC, Retik AB, Vaughan ED Jr , Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1453-1478.

The type of renal artery disease in which size and function of the involved kidney are best preserved is:

A atherosclerosis.

B medial fibroplasia.

C intimal fibroplasia.

D Takayasu's arteritis.

E perimedial fibroplasia.

The type of renal artery disease in which size and function of the involved kidney are best preserved is:

A atherosclerosis.

B medial fibroplasia.

C intimal fibroplasia.

D Takayasu's arteritis.

E perimedial fibroplasia.

The type of renal artery disease in which size and function of the involved kidney are best preserved is:

B: "medial fibroplasia." is correct.

Medial fibroplasia of the renal artery rarely progresses to complete occlusion and it is unusual for patients to experience progressive loss of renal function. All of the other listed forms of renal artery disease carry a significant risk of progression to complete occlusion with loss of renal function.

Vaughan ED Jr, Sosa RE: Renovascular hypertension and other renovascular diseases, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 429-430.

A 28-year-old C-6 quadriplegic man with recurrent urosepsis cannot perform clean intermittent catheterization and has unreliable home help. He has failed two external sphincterotomies and developed urethral erosion following indwelling urethral catheter drainage. The best management is:

A repeat external sphincterotomy.

B vesicostomy.

C ileal conduit urinary diversion.

D continent urinary diversion.

E ileovesicostomy.

A 28-year-old C-6 quadriplegic man with recurrent urosepsis cannot perform clean intermittent catheterization and has unreliable home help. He has failed two external sphincterotomies and developed urethral erosion following indwelling urethral catheter drainage. The best management is:

E: "ileovesicostomy." is correct.

An incontinent ileovesicostomy avoids the risks of chronic catheter drainage. Continent urinary diversion is inappropriate in this social setting. External sphincterotomy has failed twice. Supravesical urinary diversion may involve more extensive surgery than necessary. Vesicostomy is difficult to manage due to difficulty in securing a collecting device on the abdominal wall.

Leng WW, McGuire EJ: Reconstructive surgery for urinary incontinence. UROL CLIN N AM 1999;26(1):61-80.

A 46-year-old man with a high velocity gunshot wound to his right lower abdomen has a normal urinalysis. IVP reveals prompt bilateral excretion of contrast with no extravasation. During laparotomy a small bowel perforation and right iliac vein injury are repaired. The next step is:

A no further evaluation.

B ureteral exploration.

C intravenous injection of indigo carmine.

D bladder filling with methylene blue.

E retrograde ureteropyelography.

A 46-year-old man with a high velocity gunshot wound to his right lower abdomen has a normal urinalysis. IVP reveals prompt bilateral excretion of contrast with no extravasation. During laparotomy a small bowel perforation and right iliac vein injury are repaired. The next step is:

B: "ureteral exploration." is correct.

The incidence of ureteral injuries from penetrating trauma is low. These injuries may be difficult to detect because the IVP is either normal or indeterminate in approximately 70% and hematuria may be absent in up to 45%. Retrograde ureteropyelography or injection of dyes may miss such injuries because the blast injury often results in delayed sloughing. A high index of suspicion is necessary for diagnosis and the most accurate method is ureteral exploration.

Brandes SB, Chelsky MJ, Buckman RF, Hanno PM: Ureteral injuries from penetrating trauma. J TRAUMA 1994;36:766-769.

A four-year-old girl has had three episodes of culture-proven bacterial cystitis. A renal ultrasound shows right hydronephrosis and a normal left kidney. The next step in management is:

A renal scan.

B diuretic renogram.

C IVP.

D VCUG.

E cystoscopy and retrograde pyelogram.

A four-year-old girl has had three episodes of culture-proven bacterial cystitis. A renal ultrasound shows right hydronephrosis and a normal left kidney. The next step in management is:

D: "VCUG." is correct.

Whether the renal ultrasound is normal or abnormal, a VCUG is necessary in the child with a UTI to rule-out major abnormalities. This patient has hydronephrosis and therefore should have a diuretic renal scan after the VCUG. An IVP is an acceptable alternative following the VCUG.

Atala A, Keating MA: Vesicoureteral reflux and megaureter, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 1865.

A 66-year-old man is undergoing implantation of a semi- rigid penile prosthesis. During dilation of the corpora, blood is noted at the urethral meatus and a tear is seen in the distal urethra. The best management is:

A abort implantation and place urethral catheter.

B abort implantation and place suprapubic tube.

C continue implantation and place urethral catheter.

D continue implantation and repair urethra.

E continue implantation and place suprapubic tube.

A 66-year-old man is undergoing implantation of a semi- rigid penile prosthesis. During dilation of the corpora, blood is noted at the urethral meatus and a tear is seen in the distal urethra. The best management is:

A: "abort implantation and place urethral catheter." is correct.

The most common location for urethral laceration during implantation of a penile prosthesis is in the distal urethra, usually at the meatus. It is not generally possible to repair these injuries, and the procedure should be aborted allowing the laceration to heal over a Foley catheter for three to five days. Suprapubic diversion is unnecessary, and re-operation can be performed in four to six weeks.

Wilson SK: Management of penile implant complication, in Mulcahy JJ (ed): DIAGNOSIS AND MANAGEMENT OF MALE SEXUAL DYSFUNCTION. New York, Igaku-Shoin, 1997, p 232.

A 32- week- male fetus has bilateral hydroureteronephrosis and a thick-walled bladder on ultrasound. The most important information needed to determine further prenatal care is:

A renal parenchymal echogenicity.

B presence and timing of onset of oligohydramnios.

C degree of bladder dilation and thickening.

D urine electrolytes and beta-2 microglobulin levels.

E presence of a perinephric urinoma.

A 32- week- male fetus has bilateral hydroureteronephrosis and a thick-walled bladder on ultrasound. The most important information needed to determine further prenatal care is:

B: "presence and timing of onset of oligohydramnios." is correct.

The most likely diagnosis in this fetus is posterior urethral valves based upon male sex, bilateral hydronephrosis, and a thick walled bladder. The clinical outcome of a child with severe posterior urethral valves is most specifically predicted by the presence or absence of oligohydramnios and when the onset of oligohydramnios was noted to occur. Increased renal echogenicity alone is not predictive, although in the setting of oligohydramnios, it is a poor prognostic indicator. Bladder dilation is not a good prognostic indicator. Urinary electrolytes have been shown to be useful as an indicator of renal salvageability only in the setting of oligohydramnios and in early gestation (18 to 24 weeks).

Mandell J, Peters CA, Estroff JA, Benacerraf BR: Late onset severe oligohydramnios associated with genitourinary abnormalities. J UROL 1992;148:515-518.

The major complication from long-term oral androgenic agents is:

A BPH.

B gynecomastia.

C hepatotoxicity.

D weight gain.

E infertility.

The major complication from long-term oral androgenic agents is:

C: "hepatotoxicity." is correct.

Oral androgens are frequently ineffective because of poor absorption from the GI tract. They may cause weight gain (due to its steroidal effect), gynecomastia (due to the possibility of an increase in estrogen production from the exogenous androgens), and infertility (due to the suppressive effects of testosterone on LH and FSH). BPH secondary to exogenous androgens is a potential risk, albeit unproved at this time. However, the major complication from these oral steroids is the development of hepatic dysfunction and carcinomas in the liver. Oral agents should not be routinely used. Transdermal or intramuscular administration are preferred modes of delivery.

Korenman SG: Sexual dysfunction, in Wilson JD, Foster DW (eds): WILLIAMS TEXTBOOK OF ENDOCRINOLOGY. Philadelphia, WB Saunders Co, 1992, p 1042.

Aldosterone secretion is stimulated by:

A hyperkalemia and hyponatremia.

B hyperkalemia and hypernatremia.

C hypokalemia and hyponatremia.

D hypokalemia and hypernatremia.

E ACTH.

Aldosterone secretion is stimulated by:

A: "hyperkalemia and hyponatremia." is correct.

Aldosterone production and secretion are regulated largely by angiotensin II and by changes in the plasma concentrations of sodium and potassium. The role of ACTH in the control of aldosterone secretion is generally believed to be only permissive, subservient to the renin-angiotensin system and potassium. Direct infusion of potassium and depletion of body sodium are both potent physiologic stimuli for the secretion of aldosterone.

Bravo EL: Physiology of the adrenal cortex. UROL CLIN N AM 1989;16:433.

A 24-year-old man has sudden onset of bilateral scrotal pain associated with mild nausea. Six days earlier he had seen his internist because of bilateral parotid gland swelling. On examination, the testicles are swollen and extremely tender to palpation. The most effective therapy for this condition is bed rest, scrotal elevation, and:

A indomethacin.

B steroids.

C interferon.

D estrogens.

E gamma globulin.

A 24-year-old man has sudden onset of bilateral scrotal pain associated with mild nausea. Six days earlier he had seen his internist because of bilateral parotid gland swelling. On examination, the testicles are swollen and extremely tender to palpation. The most effective therapy for this condition is bed rest, scrotal elevation, and:

C: "interferon." is correct.

This patient has mumps-associated orchitis, a condition noted in 18% of postpubertal patients. This is usually a self-limited condition that resolves over a 7-10 day period. However, in over half of the patients with orchitis, testicular atrophy occurs. Recent work with interferon alpha-2B has shown that seven days of this therapy is capable of preventing testicular atrophy when administered after orchitis has developed. The bed rest and indomethacin will only help to decrease the pain of the orchitis but will not hasten its resolution or decrease the incidence of subsequent testicular atrophy. Gamma globulin, steroids, and diethylstilbestrol have been used to try to reduce the overall incidence of mumps orchitis. However, none of these modalities have been found to be of any benefit once orchitis has developed. Likewise none of them have been associated with limiting the subsequent occurrence of testicular atrophy.

Erpenbach KHJ: Systemic treatment with interferon alpha-2B: An effective method to prevent sterility after bilateral mumps orchitis. J UROL 1991;146:54.

Sigman M, Howards SS: Male infertility, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1287-1320.

A 65-year-old man has a 48-hour history of vomiting, diarrhea, and fever. He underwent a ureterosigmoidostomy at age 45 for bladder cancer. He is dehydrated, and his blood pressure is 80/40 mm Hg. His serum electrolytes are sodium 148 mEq/l, potassium 3.1 mEq/l, chloride 112 mEq/l, and carbon dioxide 9 mEq/l. He is vigorously resuscitated with intravenous 0.9% sodium chloride and sodium bicarbonate. Within one hour, he suffers a cardiopulmonary arrest and dies. The most probable cause of death is:

A hypernatremia.

B hyponatremia.

C hypercalcemia.

D hyperkalemia.

E hypokalemia.

A 65-year-old man has a 48-hour history of vomiting, diarrhea, and fever. He underwent a ureterosigmoidostomy at age 45 for bladder cancer. He is dehydrated, and his blood pressure is 80/40 mm Hg. His serum electrolytes are sodium 148 mEq/l, potassium 3.1 mEq/l, chloride 112 mEq/l, and carbon dioxide 9 mEq/l. He is vigorously resuscitated with intravenous 0.9% sodium chloride and sodium bicarbonate. Within one hour, he suffers a cardiopulmonary arrest and dies. The most probable cause of death is:

E: "hypokalemia." is correct.

Patients who have undergone ureterosigmoidostomy tend to have low normal serum potassium levels, but are significantly total body potassium depleted. Vigorous resuscitation of the hyperchloremic acidosis with intravenous sodium bicarbonate rapidly lowers serum potassium levels. As serum potassium is already low, acute hypokalemia leading to respiratory arrest can occur.

McDougal WS: Use of intestinal segments and urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 3152.

The operation for Peyronie's disease most likely to result in penile shortening is:

A plaque excision, dermal grafting.

B penile plication.

C plaque excision, placement of an inflatable prosthesis.

D plaque excision, placement of a semi- rigid prosthesis.

E laser plaque destruction, vein patch grafting.

The operation for Peyronie's disease most likely to result in penile shortening is:

B: "penile plication." is correct.

A variety of surgical procedures for correction of Peyronie's disease have evolved. The simplest of these is plication of the tunica albuginea on side opposite the fibrotic plaque. While this can straighten the penis, shortening of the penis is a very real risk. All the other procedures involve destruction and/or removal of plaque followed by reconstruction, and do not shorten the penis.

Jordan GH, Schlossberg SM, Devine CJ: Surgery of the penis and urethra, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 3316-3394.

Cross-matching prior to kidney transplantation involves the incubation of:

A donor whole blood with recipient serum.

B donor lymphocytes with recipient serum.

C recipient whole blood with donor serum.

D recipient lymphocytes with donor serum.

E donor red blood cells with recipient serum.

Cross-matching prior to kidney transplantation involves the incubation of:

B: "donor lymphocytes with recipient serum." is correct.

Cross-matching is the incubation of recipient serum with donor lymphocytes. This is useful to detect preformed anti-donor cytotoxic antibodies in the recipient. A positive T-cell cross-match with a current serum sample from a recipient is a contraindication to kidney transplantation because of the high probability of hyperacute rejection.

Suthanthiran M, Morris RE, Strom TB: Transplantation immunobiology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 491-504.

A one- week- old boy with a poor dribbling urinary stream has a distended bladder. A VCUG demonstrates typical posterior urethral valves and ultrasound shows moderately severe hydroureteronephrosis. The urine is clear and the creatinine is 1 mg/dl. The best method of management is:

A temporary urethral catheter, then valve ablation.

B bilateral loop ureterostomies.

C cutaneous vesicostomy.

D suprapubic cystostomy tube placement.

E transurethral valve ablation.

A one- week- old boy with a poor dribbling urinary stream has a distended bladder. A VCUG demonstrates typical posterior urethral valves and ultrasound shows moderately severe hydroureteronephrosis. The urine is clear and the creatinine is 1 mg/dl. The best method of management is:

E: "transurethral valve ablation." is correct.

This infant is in no acute distress and has a slightly elevated creatinine. The initial management should be as definitive as possible. Avoidance of urinary infection should also be paramount.

Gonzales ET: Alternatives in the management of posterior urethral valves. UROL CLIN N AM 1990;17(2):335.

The primary effect of marked chronic diuresis upon the ureter is:

A no change.

B aperistalsis.

C dilation.

D atrophy.

E fibrosis.

The primary effect of marked chronic diuresis upon the ureter is:

C: "dilation." is correct.

Diuresis induces ureteral dilation which is the result of elongation and an increase in diameter of the ureter. If prolonged, some hypertrophy of ureteral muscle occurs.

Weiss RM: Physiology and pharmacology of the renal pelvis and ureter,in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 839-869.

A 63-year-old woman with a history of transitional cell bladder carcinoma (Grade II, Stage T1) has gross, painless hematuria. IVP shows no abnormality. Voided urinary cytologies are consistent with transitional cell carcinoma, yet cystoscopically there are no visible tumors in the bladder, and random biopsies are negative. The next step should be:

A flow cytometry of bladder washings.

B cystoscopy and cytology in three months.

C ureteral cytology.

D CT scan of the pelvis.

E ureteral and bladder cytology.

A 63-year-old woman with a history of transitional cell bladder carcinoma (Grade II, Stage T1) has gross, painless hematuria. IVP shows no abnormality. Voided urinary cytologies are consistent with transitional cell carcinoma, yet cystoscopically there are no visible tumors in the bladder, and random biopsies are negative. The next step should be:

E: "ureteral and bladder cytology." is correct.

Transitional cell carcinoma is a disease of the entire urothelium and may involve the upper or lower tracts. With no significant lesion on the IVP, CT scan is unlikely to be of help. Ureteral cytologies alone may miss a source of positive cytology in the bladder, necessitating simultaneous bladder and ureteral cytology. Flow cytometry of the bladder, though possibly more objective than standard cytologies, does not rule out upper tract lesions. Delaying evaluation for three months may allow the tumor to progress.

Messing EM, Catalona WJ: Urothelial tumors of the urinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 2352.

A 51-year-old man with a neurogenic bladder has a continent urinary diversion using a detubularized right colon. Three months later, he is asymptomatic but a routine pouchogram shows Grade III/V right ureteral reflux. An IVP is normal. The best next step is:

A right to left transureteroureterostomy.

B reimplant the right ureter with a longer tunnel.

C antibiotic prophylaxis.

D pouch catheterization every two hours.

E observation.

A 51-year-old man with a neurogenic bladder has a continent urinary diversion using a detubularized right colon. Three months later, he is asymptomatic but a routine pouchogram shows Grade III/V right ureteral reflux. An IVP is normal. The best next step is:

E: "observation." is correct.

Although most continent urinary diversions are performed with a non-refluxing ureteral implant, there is no evidence that reflux is detrimental or progressive with short term follow-up. Unless this patient develops recurrent problems with infection or progressive renal deterioration, observation alone is appropriate.

McDougal WS: Use of intestinal segments and urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 3137-3138.

A 45-year-old African- American man has a one year history of progressive irritative voiding symptoms and general malaise. Urinalysis shows 15- 20 WBC and 5 RBC/hpf. Urinary cytologies are negative. The serum creatinine is 4.5 mg/dl. Cystoscopy reveals an elongated urethra and inflammatory changes within the bladder. CT scan demonstrates bilateral hydronephrosis and encasement of the bladder, rectum, and both ureters by tissue that has negative Hounsfield units. The next step is:

A high dose steroid therapy.

B clean intermittent catheterization.

C ileal conduit.

D ureterolysis.

E bilateral nephrostomy tubes.

A 45-year-old African- American man has a one year history of progressive irritative voiding symptoms and general malaise. Urinalysis shows 15- 20 WBC and 5 RBC/hpf. Urinary cytologies are negative. The serum creatinine is 4.5 mg/dl. Cystoscopy reveals an elongated urethra and inflammatory changes within the bladder. CT scan demonstrates bilateral hydronephrosis and encasement of the bladder, rectum, and both ureters by tissue that has negative Hounsfield units. The next step is:

E: "bilateral nephrostomy tubes." is correct.

This patient's clinical presentation is typical of pelvic lipomatosis and does not require tissue diagnosis. Treatment of the mass with radiotherapy or excision has not generally been successful. While there have been occasional reports of successful treatment with chronic antibacterial suppression, this in general has not been a successful approach. Steroid therapy has no role in pelvic lipomatosis. Supravesical diversion may be indicated as the ultimate treatment of choice in this man but the immediate therapy of his renal insufficiency can be accomplished by temporary nephrostomy drainage.

Haynes CF: Pelvic lipomatosis: A review of its diagnosis and management. J UROL 1991;146:267-273.

Resnick MI, Kursh ED: Extrinsic obstruction of the ureter, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 387-422.

The pudendal nerve and artery run along the lateral wall of the ischiorectal fossa in a tunnel formed by splitting of the obturator fascia which is called:

A the fascia of the ischial tuberosity.

B the levator fascia.

C Hunter's canal.

D Alcock's canal.

E the sciatic canal.

The pudendal nerve and artery run along the lateral wall of the ischiorectal fossa in a tunnel formed by splitting of the obturator fascia which is called:

D: "Alcock's canal." is correct.

Alcock's pudendal canal is a fascial tunnel lateral to the levator ani and medial to the obturator internus muscle. Benjamin Alcock (born 1801, Ireland) was the first professor of anatomy at Queen's College, Cork.

Hinman F Jr: ATLAS OF UROSURGICAL ANATOMY. Philadelphia, WB Saunders Co, 1993, pp 224, 228, 332.

A 40-year-old woman with periorbital xanthelasma develops severe abdominal pain and has a falling hematocrit. Renal arteriography reveals bilateral vascular renal tumors and a site of active hemorrhage from a right lower pole vessel. A CT scan shows negative Hounsfield units within both kidneys. The best management is:

A angiographic embolization of the lower segmental vessel.

B percutaneous evacuation of the hematoma.

C laparotomy, evacuation of hematoma, and right partial nephrectomy.

D laparotomy, evacuation of hematoma, and right nephrectomy.

E radical right nephrectomy.

A 40-year-old woman with periorbital xanthelasma develops severe abdominal pain and has a falling hematocrit. Renal arteriography reveals bilateral vascular renal tumors and a site of active hemorrhage from a right lower pole vessel. A CT scan shows negative Hounsfield units within both kidneys. The best management is:

A: "angiographic embolization of the lower segmental vessel." is correct.

Renal angiomyolipoma is a benign tumor that may occur as an isolated phenomenon or as part of the syndrome associated with tuberous sclerosis. The preferred imaging modality is CT. The presence of fat is characteristic for an angiomyolipoma (negative Hounsfield units). Patients may present with sudden pain or hypotension because of massive hemorrhage within the lesion. Patients with large angiomyolipomas and severe symptoms should undergo immediate selective arterial embolization, if possible, or conservative surgical therapy if embolization is not practical. Angiofarction should be the first attempted therapy in any patient having hemorrhage into any angiomyolipoma.

Steiner MS, Goldman SM, Fishman EK, et al: The natural history of renal angiomyolipoma. J UROL 1993;150:1782.

Belldegrum A, deKernion JB: Renal tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2289-2291.

A six-year-old boy with nocturnal enuresis has been treated with imipramine. He took an excessive dose last night and is lethargic this morning. The best plan is:

A observation.

B cardiac monitoring.

C Kayexalate enema.

D hemodialysis.

E atropine.

A six-year-old boy with nocturnal enuresis has been treated with imipramine. He took an excessive dose last night and is lethargic this morning. The best plan is:

B: "cardiac monitoring." is correct.

Tricyclic antidepressants (TCAs) (e.g. imipramine) can cause toxicity at doses of 10-20 mg/kg. A 50 mg/kg dose is likely to be fatal. They are absorbed in the small bowel and have anticholinergic actions. Tissue levels, especially in myocardium, are much higher than serum levels. Toxic effects are central and peripheral anticholinergic actions (amine pump blockage that enhances catecholamine actions) as well as myocardial depression. The last is the most problematic, requiring cardiac monitoring. Emetics will be too late in this case, the urgent need is cardiac monitoring. Hemodialysis will take more than an hour to institute and is an incorrect priority. Kayexalate will not help. Atropine is contraindicated. Physostigmine, used in the past, doesn't help with the cardiac effects of TCAs and may cause its own rhythm disturbances.

Rogers MC: PEDIATRIC INTENSIVE CARE. Baltimore, Williams and Wilkins, 1992, p 1307.

A 75-year-old hypertensive woman has abdominal fullness and mild left flank pain. CT scan reveals a 14 cm left renal mass with a 2.5 cm para-aortic lymph node. Percutaneous biopsy of the renal mass reveals leiomyosarcoma. Metastatic evaluation is negative. Optimal therapy is:

A doxorubicin-based chemotherapy.

B radical nephrectomy and lymphadenectomy.

C radical nephrectomy, lymphadenectomy, and external beam radiotherapy.

D external beam radiotherapy.

E radical nephrectomy, lymphadenectomy, and adjuvant chemotherapy.

A 75-year-old hypertensive woman has abdominal fullness and mild left flank pain. CT scan reveals a 14 cm left renal mass with a 2.5 cm para-aortic lymph node. Percutaneous biopsy of the renal mass reveals leiomyosarcoma. Metastatic evaluation is negative. Optimal therapy is:

B: "radical nephrectomy and lymphadenectomy." is correct.

Of all renal sarcomas, leiomyosarcoma is the most common. As with all sarcomas, optimal treatment is excision and, in this case, should include radical nephrectomy as well as removal of the regional lymph nodes. The utility of adjuvant therapy has not been established but usually involves the use of doxorubicin-based chemotherapy. In this elderly patient who is at risk of heart disease, reserving such therapy for local recurrence would be the most reasonable approach.

Vogelzang NJ, Fremgen AM, Guinan PD, Chmiel JS, et al: Primary renal sarcoma in adults. CANCER 1993;71:804-810.

Belldegrun A, deKernion JB: Renal tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 2318.

During renal transplantation, vascular anastomosis with a Carrel aortic patch that encompasses the donor renal artery(ies) is indicated primarily for:

A cadaveric kidneys with an atherosclerotic renal artery.

B cadaveric kidneys from donors < six years old.

C recipients under five years of age.

D live donor kidneys with multiple arteries.

E recipients with severe iliac atherosclerosis.

During renal transplantation, vascular anastomosis with a Carrel aortic patch that encompasses the donor renal artery(ies) is indicated primarily for:

B: "cadaveric kidneys from donors < six years old." is correct.

Anastomosis of a Carrel aortic patch encompassing all donor arteries to the recipient common or external iliac artery is the recommended method of arterial anastomosis for cadaver kidneys from donors less than six years old. Without the use of an aortic cuff there is increased risk for stenosis/thrombosis. An aortic patch should never be taken in a living donor because of the increased risk to the donor. Another indication for the Carrel aortic patch is a cadaveric kidney with multiple arteries.

Hudnall CH, Hodge EE, Centeno AS, et al: Evaluation of pediatric cadaver kidneys transplanted into adult recipients receiving cyclosporine, J UROL 1989;142:1181-1185.

Lippman H, Jacoby K, McFarlin L, et al: Surgical complications in 50 adult renal transplant recipients of single kidneys from cadaveric donors aged 11-48 months. CLIN TRANSPL 1992;6:350-356.

The first renal function parameter impaired by ureteral obstruction is:

A ammonia excretion.

B bicarbonate excretion.

C potassium excretion.

D water reabsorption.

E chloride reabsorption.

The first renal function parameter impaired by ureteral obstruction is:

D: "water reabsorption." is correct.

Ureteral obstruction destroys the concentration gradient that causes water reabsorption in the distal tubule. This loss of urinary concentrating ability is the earliest renal manifestation of ureteral obstruction.

Vaughan ED Jr, Sosa RE: Renovascular hypertension and other renal vascular diseases, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 438-443.

A 72-year-old man with metastatic prostate cancer is treated with leuprolide and flutamide. Two months after beginning treatment, he reports anorexia, nausea, and dark- colored urine. Initial management should be to obtain liver function tests, an ultrasound of the biliary tree, and:

A liver biopsy.

B discontinue leuprolide.

C bone scan.

D CT scan of upper abdomen.

E discontinue flutamide.

A 72-year-old man with metastatic prostate cancer is treated with leuprolide and flutamide. Two months after beginning treatment, he reports anorexia, nausea, and dark- colored urine. Initial management should be to obtain liver function tests, an ultrasound of the biliary tree, and:

E: "discontinue flutamide." is correct.

The association of flutamide and hepatotoxicity, fatal in six reported cases, is well-established. Patients may present with jaundice or merely symptoms of malaise. Laboratory investigations may demonstrate elevated transaminases as well as evidence of cholestatic jaundice. If recognized early and flutamide discontinued, in most cases hepatotoxicity will resolve. In unrecognized cases, hepatic necrosis, hepatic encephalopathy, and death may result.

Wysowski DK, Freiman JP, Tourtelot JB, et al: Fatal and nonfatal hepatotoxicity associated with flutamide. ANN INT MED 1993;18:860-864.

Moller S, Iversen P, Franzmann MB: Flutamide-induced liver failure. J HEPATOL 1990;10:346-349.

During the third trimester of pregnancy, the most common changes in renal function are:

A elevated BUN; decreased creatinine.

B elevated BUN; elevated creatinine.

C decreased BUN; decreased creatinine.

D decreased BUN; elevated creatinine.

E unchanged BUN and creatinine.

During the third trimester of pregnancy, the most common changes in renal function are:

C: "decreased BUN; decreased creatinine." is correct.

In pregnancy, glomerular filtration rate increases about 50% as full term approaches. This increase in GFR leads to a decrease in the serum BUN and creatinine. Therefore, the normal values for BUN and creatinine are lower in pregnant women than they are in non-pregnant women.

Paller MS, Ferris TF: The kidney and hypertension in pregnancy, in Brenner B (ed), THE KIDNEY, ed 5. Philadelphia, WB Saunders Co, 1996, pp 1731-1736.

A 60-year-old woman has significant stress urinary incontinence. She underwent a transvaginal needle suspension three years ago and became more incontinent after the surgery. Her physical examination and urinalysis are normal. The abdominal leak point pressure is 38 cm H2O. A fluoroscopic image shows no evidence of urethral hypermobility. The best therapy is:

A artificial urinary sphincter.

B suprapubic bladder suspension.

C collagen injection.

D transvaginal bladder suspension.

E biofeedback therapy.

A 60-year-old woman has significant stress urinary incontinence. She underwent a transvaginal needle suspension three years ago and became more incontinent after the surgery. Her physical examination and urinalysis are normal. The abdominal leak point pressure is 38 cm H2O. A fluoroscopic image shows no evidence of urethral hypermobility. The best therapy is:

C: "collagen injection." is correct.

The abdominal leak pressure study reveals incontinence due to intrinsic sphincter deficiency (ISD). Artificial sphincters are no longer routinely performed in women because of significant morbidity. Suprapubic and vaginal suspensions can correct urethral hypermobility, but are much less likely to cure leakage from ISD. Biofeedback, although useful for detrusor instability and mild stress incontinence, is rarely helpful for intrinsic sphincter deficiency defined by a low abdominal leak point pressure. A pubovaginal sling procedure would also be an appropriate choice in this setting. Collagen use is less invasive and has a reasonable chance for success.

Appell RA: Periurethral injection therapy, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1109-1120.

A 58-year-old man has recurrent left flank pain. A KUB demonstrates a 1 cm stone in the left upper pole calyx and IVP reveals that the calculus is in a partially obstructed caliceal diverticulum that fills with contrast. CT scan shows the caliceal diverticulum to be anteriorly located. There is no history of UTI. The next step is:

A partial nephrectomy.

B open marsupialization.

C ESWL.

D percutaneous nephrolithotomy.

E laparoscopic diverticulectomy.

A 58-year-old man has recurrent left flank pain. A KUB demonstrates a 1 cm stone in the left upper pole calyx and IVP reveals that the calculus is in a partially obstructed caliceal diverticulum that fills with contrast. CT scan shows the caliceal diverticulum to be anteriorly located. There is no history of UTI. The next step is:

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C: "ESWL." is correct.

ESWL of a stone in a caliceal diverticulum has yielded clearance rates from 25-75%. More importantly, long-term symptomatic pain relief is often independent of the stone-free rate. Recurrent infection is reported in up to 67% of those patients with a stone in a caliceal diverticulum. Since this patient is uninfected and the diverticulum fills with contrast during IVP, ESWL is an attractive alternative which should provide symptomatic relief in this patient. Although a percutaneous approach has been reported to be an effective modality for treating stones in a caliceal diverticulum, this patient has an anteriorly located diverticulum which would be difficult to access percutaneously.

Streem SB, Yost A: Treatment of caliceal diverticular calculi with extracorporeal shock wave lithotripsy: Patient selection and extended follow-up. J UROL 1992;148:1043-1046.

Following a nephrectomy for calculous disease, a patient with a normal contralateral kidney has a urine output of 800 ml/day despite receiving 2000 ml I.V. fluids daily. Blood loss at nephrectomy was replaced. The serum sodium is 125 mEq/l and the serum osmolality is 270 mOsm/l. The urinary sodium is 20 mEq/l, the serum potassium is 3.5 mEq/l, and the urine osmolality is 480 mOsm/l. The most likely cause of these findings is:

A inappropriate ADH secretion.

B acute tubular necrosis.

C adrenal insufficiency.

D dehydration.

E exogenous water intoxication.

Following a nephrectomy for calculous disease, a patient with a normal contralateral kidney has a urine output of 800 ml/day despite receiving 2000 ml I.V. fluids daily. Blood loss at nephrectomy was replaced. The serum sodium is 125 mEq/l and the serum osmolality is 270 mOsm/l. The urinary sodium is 20 mEq/l, the serum potassium is 3.5 mEq/l, and the urine osmolality is 480 mOsm/l. The most likely cause of these findings is:

A: "inappropriate ADH secretion." is correct.

The syndrome of inappropriate ADH secretion (SIADH) may be associated with malignancy, pulmonary and CNS disorders, and certain drugs. Hyponatremia, decreased serum osmolarity (< 285 mosm/l) with inappropriately increased urine osmolarity (> 300 mosm/l), normal adrenal and thyroid function and urine sodium in excess of 20 mEq/l characterize the process. A diagnosis of SIADH can only be made if a patient is euvolemic (as in the present case), as increased ADH secretion is physiologic in hypovolemic states. Adrenal insufficiency would result in increased serum potassium. Dehydration would result in mild hypernatremia and a higher urine osmolarity. There is no reason, in the present case, to consider water intoxication given the administration of only 2000 ml of I.V. fluid daily.

Papadakis, MA: Fluid and electrolyte disorders, in Tierney LM, McPhee SF, Papadakis MA (eds): CURRENT MEDICAL DIAGNOSIS AND TREATMENT. Norfolk, Lange Medical Books, 1994, p 711.

A CT scan demonstrates a new 4 cm nodule in the left adrenal gland of a 58-year-old man who underwent a right radical nephrectomy for renal cell carcinoma eight years previously. He has mild hypertension that is well- controlled medically and is otherwise healthy. An MRI scan demonstrates the adrenal nodule to be isointense with liver on T2- weighted images. The next best step is:

A clonidine suppression test.

B MIBG scan.

C needle biopsy.

D adrenalectomy.

E repeat CT scan in six months.

A CT scan demonstrates a new 4 cm nodule in the left adrenal gland of a 58-year-old man who underwent a right radical nephrectomy for renal cell carcinoma eight years previously. He has mild hypertension that is well- controlled medically and is otherwise healthy. An MRI scan demonstrates the adrenal nodule to be isointense with liver on T2- weighted images. The next best step is:

D: "adrenalectomy." is correct.

Many patients with renal cell carcinoma manifest asynchronous metastases which when solitary and resectable are best managed surgically, hence adrenalectomy is the best choice. This approach has been associated with prolonged disease-free survival, especially when the interval between the initial diagnosis and metastasis is greater than one year. Neither the clinical nor radiographic data in this case are suggestive of pheochromocytoma, which would be expected to be hyperintense compared with liver on T2-weighted images. A benign adrenal adenoma is possible, but in view of the history of renal cell carcinoma is a diagnosis of exclusion. Waiting six months to determine if the lesion has change radiographically places the patient at risk for progressive metastatic disease. The malignant potential of adrenal tumors is notoriously difficult to determine on a needle biopsy.

Kavolius JP, Mastorakos DP, Pavlovich C, Russo P, et al: Resection of metastatic renal cell carcinoma. J CLIN ONCOL 1998;16:2261.

A 27-year-old HIV positive man has acute left flank pain. Urinalysis reveals microscopic hematuria. Non- contrast helical CT scan demonstrates left hydroureteronephrosis with no evidence of stones. The medication most likely to cause his hydronephrosis is:

A isoniazid.

B rifampin.

C indinavir.

D trimethoprim-sulfamethoxazole.

E AZT.

A 27-year-old HIV positive man has acute left flank pain. Urinalysis reveals microscopic hematuria. Non - contrast helical CT scan demonstrates left hydroureteronephrosis with no evidence of stones. The medication most likely to cause his hydronephrosis is:

C: "indinavir." is correct.

HIV patients have had dramatic clinical improvement with protease inhibitors. These drugs (primarily indinavir) can result in as high as a 6% incidence of urinary calculi. These calculi may not be demonstrated in noncontrast helical CT scan or standard radiographic imaging studies. Management should include hydration, discontinuation of medication for two to three days, and conservative pain management. Most stones will pass spontaneously.

Gentle DL, Stoller ML, Jarrett TW, et al: Protease inhibitor-induced urolithiasis. UROL 1997;Oct 50(4):508-511.

The medication which results in direct blockade of gonadal androgen synthesis is:

A ketoconazole.

B flutamide.

C finasteride.

D cyproterone.

E leuprolide.

The medication which results in direct blockade of gonadal androgen synthesis is:

A: "ketoconazole." is correct.

Ketoconazole directly blocks both gonadal and adrenal androgen synthesis. It is the most rapid medical means of inducing an anorchid state. Flutamide, a nonsteroidal anti-androgen and cyproterone, a steroidal anti-androgen, both block the receptor for androgens. Finasteride blocks 5-alpha-reductase and leuprolide is a luteinizing hormone-releasing hormone agonist which causes a fall in serum LH-RH levels with the indirect consequence being the blocking of gonadal androgen synthesis.

Wise GJ: Fungal infections of the urinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 798-799.

Schroeder FH: Endocrine treatment of prostate cancer, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2627-2640.

In neonates with unilateral renal vein thrombosis, the most common long- term problem is:

A nephrotic syndrome.

B hypertension.

C renal scarring.

D glomerulonephritis.

E recurrent renal infection.

In neonates with unilateral renal vein thrombosis, the most common long- term problem is:

B: "hypertension." is correct.

Renal vein thrombosis in childhood most often presents with gross hematuria in association with a flank mass, thrombocytopenia, metabolic acidosis, tachypnea, pallor, failure to thrive, proteinuria, and diminished renal function. Bilateral renal vein thrombosis in childhood is uncommon. Conservative (non-surgical, non-interventional) management results in a survival rate approaching 90%. Hypertension, the most common long-term problem encountered after unilateral renal vein thrombosis, may be seen in 15%. Delayed nephrectomy appears the most successful management for hypertension after unilateral renal vein thrombosis.

Evans DJ, et al : Congenital hypertension due to unilateral renal vein thrombosis. ARCH DIS CHILD 1981;56:306.

Smith JA, et al: Hypertension in childhood from renal vein thrombosis. J UROL 1979;122:389.

During fluoroscopy, the radiation hazard for the urologist is most effectively minimized by placing the x-ray tube:

A close to and the image intensifier far from the patient.

B above and the image intensifier below the patient.

C close to and the image intensifier close to the patient.

D below and the image intensifier above the patient.

E far from and the image intensifier close to the patient.

During fluoroscopy, the radiation hazard for the urologist is most effectively minimized by placing the x-ray tube:

D: "below and the image intensifier above the patient." is correct.

Secondary scatter radiation is produced when a primary x-ray beam passes through a patient's body. This scatter radiation presents the greatest hazard for a urologist. If the x-ray tube is mounted beneath the patient, most of the secondary radiation is absorbed by the patient. If the x-ray tube is mounted above the patient, most of the secondary radiation is aimed at the urologist, especially his face (corneas) and neck (thyroid). The image intensifier will absorb much of the scattered radiation if it is placed close to the patient, but this factor is not as important as x-ray tube location.

Castaneda WR, Espenan GD: How to protect yourself and others from radiation, in Smith AD (ed): SMITH'S TEXTBOOK OF ENDOUROLOGY. St. Louis, Quality Medical Publishing Inc, 1996, p 27.

A previously healthy 34-year-old woman is anuric eight hours following a Marshall- Marchetti- Krantz operation for stress urinary incontinence. Her urethral catheter irrigates easily and she does not respond to a fluid challenge. Preoperatively, her serum creatinine was 0.7 mg/dl. The study which will most likely establish the diagnosis is:

D: "IVP." is correct.

Bilateral ureteral obstruction can occur following a Marshall-Marchetti-Krantz procedure. Sutures can obstruct the intramural ureters bilaterally, particularly when the bladder base is elevated into the wound by an assistant's finger in the vagina. The most likely cause of this patient's anuria is bilateral ureteral obstruction. The study of choice to establish the diagnosis of bilateral ureteral obstruction in this setting is an IVP. Serum creatinine and urinary sodium concentration and osmolality will not help in this diagnosis. Likewise, a VCUG is not warranted. An isotope renal scan is not the study of choice to identify hydroureteronephrosis.

Resnick MI, Kursh ED: Extrinsic obstruction of the ureter, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 387-422.

The form of urinary tract obstruction most likely to be associated with renin-dependent hypertension is:

A intermittent.

B acute unilateral.

C acute bilateral.

D chronic unilateral.

E chronic bilateral.

The form of urinary tract obstruction most likely to be associated with renin-dependent hypertension is:

B: "acute unilateral." is correct.

The only form of urinary tract obstruction that may cause renin-mediated hypertension is acute unilateral hydronephrosis. Chronic bilateral hydronephrosis may also cause hypertension but it is volume related and is not associated with hyperreninemia. To establish that hydronephrosis is causing renin-mediated hypertension, divided renal vein renins should show lateralization to the hydronephrotic kidney with suppression of renin output from the normal kidney. A peripheral plasma renin level, even when indexed against the 24-hour urinary sodium, is not a good screening test. Weidmann reported eight patients with unilateral hydronephrosis and renin-mediated hypertension where the peripheral plasma renin levels were normal despite lateralizing renal vein renins. The most common cause of renin-mediated hypertension, renal artery stenosis, should be ruled-out by arteriography.

Vaughan ED, Sosa RE: Renovascular hypertension and other renal vascular diseases, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 438-443.

A nine-year-old boy is in a motor vehicle accident. He has right flank pain and has voided spontaneously. Urinalysis and vital signs are normal. Physical examination reveals a right flank contusion. Chest x- ray reveals a fracture of the right 12th rib. The next step is:

A ultrasound.

B CT scan.

C observation.

D IVP.

E renal scan.

A nine-year-old boy is in a motor vehicle accident. He has right flank pain and has voided spontaneously. Urinalysis and vital signs are normal. Physical examination reveals a right flank contusion. Chest x- ray reveals a fracture of the right 12th rib. The next step is:

B: "CT scan." is correct.

Following blunt trauma, radiographic evaluation of the kidney can be omitted if there is no hematuria and no history of hypotension. However, if there is a rib fracture or abnormalities on physical exam, a renal injury should be suspected. CT scan is the best imaging study to exclude injury.

McAninch JW: Renal injuries, in Gillenwater JY, Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY, ed 3. St Louis, Mosby Year Book, 1996, pp 539-554.

Congenital androgen resistance syndromes are usually associated with:

A reversible infertility.

B elevated serum testosterone levels.

C normal serum LH levels.

D normal serum estradiol levels.

E low serum FSH levels.

Congenital androgen resistance syndromes are usually associated with:

B: "elevated serum testosterone levels." is correct.

Congenital androgen resistance syndromes are generally associated with infertility and elevated serum testosterone, LH, and FSH levels. The syndromes are also usually associated with elevated serum estradiol levels due to increased secretion by the testes.

Hensle TW, Kennedy WA: Surgical management of intersexuality, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2155-2170.

Schweikert HU: The androgen resistance syndromes: Clinical and biochemical aspects. EUR J PED 1993;152(2):S50-S57.

A ten-year-old child was treated with Cytoxan chemotherapy and bone marrow transplantation for leukemia. Severe hematuria requiring transfusion develops. The most likely cause is:

A leukemic infiltrates in the bladder.

B bacterial cystitis.

C graft versus host reaction.

D acrolein.

E thrombocytopenia.

A ten-year-old child was treated with Cytoxan chemotherapy and bone marrow transplantation for leukemia. Severe hematuria requiring transfusion develops. The most likely cause is:

D: "acrolein." is correct.

Cyclophosphamide is given in large doses in the therapy of acute lymphocytic leukemia and in bone marrow transplantation. A urinary metabolite of cyclophosphamide, acrolein, is believed to be responsible for both hemorrhagic cystitis and bladder cancer. Patients treated with cyclophosphamide have up to a nine-fold increased risk of developing bladder cancer.

Messing EM, Catalona W: Urothelial tumors of the urinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 2337.

A 24-year-old sexually active homosexual man has a solitary erythematous nodule on the penile shaft. He does not have a urethral discharge. Purulent material is expressed from the nodule and culture on Thayer- Martin medium reveals oxidase positive colonies. The most likely diagnosis is:

A primary syphilis.

B gonorrhea.

C chancroid.

D lymphogranuloma venereum.

E Kaposi's sarcoma.

A 24-year-old sexually active homosexual man has a solitary erythematous nodule on the penile shaft. He does not have a urethral discharge. Purulent material is expressed from the nodule and culture on Thayer- Martin medium reveals oxidase positive colonies. The most likely diagnosis is:

B: "gonorrhea." is correct.

This patient's presentation is lacking in the usual signs and symptoms of gonorrhea, but an oxidase positive culture on Thayer -Martin medium is diagnostic of Neisseria gonorrhea. The lesion and other characteristics are not consistent with syphilis, chancroid, lymphogranuloma venereum, or Kaposi's sarcoma. Cutaneous lesions and accessory glandular infection may be the only manifestations of active gonorrhea.

Pfeffer DM: Sexually transmitted diseases, in Stein BS, Caldamone AA, Smith JA (eds): CLINICAL UROLOGIC PRACTICE. New York, WW Norton, 1995, pp 355-394.

A 68-year-old man with Parkinson's disease underwent a TURP two years ago for nocturia, frequency, hesitancy, and urinary incontinence. His symptoms were not alleviated by the prostatectomy and his incontinence worsened. The most informative test would be:

A videourodynamic study.

B urethral pressure profilometry with fluoroscopy.

C residual urine determination.

D cystoscopy.

E voiding flow rate and AUA Symptom Score.

A 68-year-old man with Parkinson's disease underwent a TURP two years ago for nocturia, frequency, hesitancy, and urinary incontinence. His symptoms were not alleviated by the prostatectomy and his incontinence worsened. The most informative test would be:

A: "videourodynamic study." is correct.

Patients with Parkinson's disease most frequently experience urinary tract symptoms, including urinary incontinence, because of uninhibited bladder contractions. The fact that this patient's incontinence worsened following a TURP raises the question as to whether he also has sphincteric incontinence. The best way to evaluate both his bladder and his distal continence mechanism is with a videourodynamic study. Urethral pressure profilometry with fluoroscopy will not determine the status of uninhibited bladder contractions. Symptom score, residual urine determination, cystoscopy, and flow rate do not determine the presence of uninhibited bladder contractions.

Blaivas JG, Romanzi LJ, Heritz DM: Urinary incontinence: Pathophysiology, evaluation, treatment overview and non-surgical management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1007-1043.

A 64-year-old man with BPH has dysuria, frequency, and hematuria following removal of a urethral catheter after a hip replacement. He is allergic to penicillin. A urine culture taken from the catheter at time of removal grew Enterococcus faecalis. The best treatment is:

A cephalexin.

B gentamicin.

C norfloxacin.

D clindamycin.

E nitrofurantoin.

A 64-year-old man with BPH has dysuria, frequency, and hematuria following removal of a urethral catheter after a hip replacement. He is allergic to penicillin. A urine culture taken from the catheter at time of removal grew Enterococcus faecalis. The best treatment is:

E: "nitrofurantoin." is correct.

Enterococci are the second most common cause of nosocomial UTIs after E. coli. Most urinary infections with these bacteria are catheter related. Enterococcus faecalis is by far the most common species. Enterococci faecalis is often susceptible to a variety of antibiotics but ampicillin, gentamicin, and vancomycin resistant strains pose major therapeutic problems. Most Enterococci are still sensitive to nitrofurantoin. Catheterized patients should not be treated unless there is evidence of systemic infection. In this patient with a simple, lower urinary tract symptomatic cystitis secondary to catheterization, treatment is indicated.

Pallares R, Pujo LM, Penna C, et al: Cephalosporins as risk factor for nosocomial Enterococcus faecalis bacteremia. ARCHIVES INT MED 1993;153:1581-1586.

Kunin CM: URINARY TRACT INFECTIONS: DETECTION, PREVENTION AND MANAGEMENT. Baltimore, Williams & Wilkins, 1997, pp 314-315.

The most common etiology for ureteropelvic junction obstruction in childhood is:

A extrinsic compression.

B stone disease.

C polar vessel.

D congenital dysplastic segment.

E ureteral valve.

The most common etiology for ureteropelvic junction obstruction in childhood is:

D: "congenital dysplastic segment." is correct.

Although extrinsic compression and polar vessels may cause ureteropelvic junction obstruction, the most common etiology by far is a congenital dysplastic segment. It is important to recognize this lesion and excise these segments so that the transmission of peristalsis can occur across the reconstructed ureteropelvic junction.

Hensle TW, Kirsch AJ: The correction of ureteropelvic junction obstruction, in Marshall FF (eds): TEXTBOOK OF OPERATIVE UROLOGY. Philadelphia, WB Saunders Co, 1996, p 824.

Most Americans with clinically detectable uric acid stones have:

A gout.

B renal tubular acidosis.

C disorders of purine metabolism.

D elevated urinary uric acid levels.

E normal serum uric acid levels.

Most Americans with clinically detectable uric acid stones have:

E: "normal serum uric acid levels." is correct.

The serum uric acid level in patients with uric acid stones is usually normal. Most patients do not have gout; most of the stones are located in the upper tracts. Disorders of purine metabolism have not been identified to account for the formation of most uric acid stones, and the urinary uric acid levels are usually normal. Patients with uric acid stones have acid urine whereas patients with renal tubular acidosis usually have alkaline urine.

Jenkins AD: Calculus formation, in Gillenwater JY,Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY, ed 3. St. Louis, Mosby Year Book, 1996, p 475.

A 56-year-old previously healthy woman develops hypertension that is poorly controlled with multiple-drug antihypertensive therapy. The serum creatinine is 1.3 mg/dl. A technetium DTPA renal scan is done before and sixty minutes after a 50 mg oral dose of captopril. The time-activity curves are depicted below in Figures A (pre-captopril) and B (post-captopril). The next step in her evaluation should be:

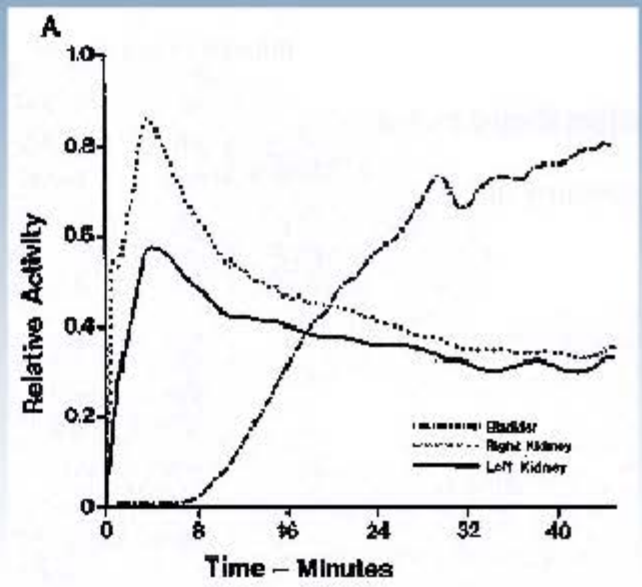
A differential renal vein plasma renin assays.

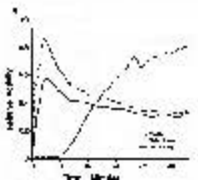
B renal duplex ultrasound.

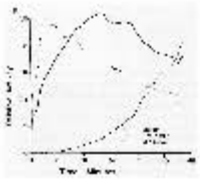
C I.V.- renal digital subtraction angiogram.

D renal arteriography.

E peripheral plasma renin assays pre- and post-captopril.







A 56-year-old previously healthy woman develops hypertension that is poorly controlled with multiple-drug antihypertensive therapy. The serum creatinine is 1.3 mg/dl. A technetium DTPA renal scan is done before and sixty minutes after a 50 mg oral dose of captopril. The time-activity curves are depicted below in Figures A (pre-captopril) and B (post-captopril). The next step in her evaluation should be:

D: "renal arteriography." is correct.

A kidney with high grade renal artery stenosis exhibits impaired excretory function during converting enzyme inhibition due to interrupted autoregulation of the glomerular filtration rate (GFR). In patients with unilateral renal artery stenosis, there is no associated detectable change in renal function since overall GFR is maintained by the opposite healthy kidney. However, captopril-induced unilateral changes in renal function can be detected by isotope renography which has afforded a new, non-invasive, and relatively accurate screening test for renovascular hypertension. The post-captopril renogram in this patient demonstrates significant impairment in the left renal uptake and excretion of isotope compared to the pre-captopril study. Recent studies have suggested a sensitivity of 80% and a specificity of 90%-100% for this finding in patients with renovascular hypertension due to unilateral stenosis. Therefore, with a positive captopril renogram and a strongly suggestive clinical history, the appropriate next step is renal arteriography which is likely to reveal significant left renal artery stenosis in this patient.

Vaughan ED Jr, Sosa RE: Renovascular hypertension and other renovascular diseases, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 423-459.

The best initial treatment of a 45-year-old unmarried man with an AUA Symptom Score of 25 and a peak flow rate of 7 ml/sec is:

A alpha-blocker.

B finasteride.

C transurethral incision of the prostate.

D transurethral resection of the prostate.

E laser ablation of the prostate.

The best initial treatment of a 45-year-old unmarried man with an AUA Symptom Score of 25 and a peak flow rate of 7 ml/sec is:

A: "alpha-blocker." is correct.

The patient has severe urinary symptoms and a markedly reduced peak urinary flow rate. The most likely diagnosis is bladder outlet obstruction secondary to bladder neck hypertrophy or BPH. Since the patient is relatively young and unmarried, the effect of treatment on fertility must be considered. All of the surgical procedures may cause retrograde ejaculation. Finasteride is less effective than terazosin and precautions must be taken for those individuals planning to initiate a pregnancy. The tension of bladder neck and prostate smooth muscle is mediated by alpha-1 adrenoceptors. Alpha-blockers will improve both symptoms and peak flow rate.

Lepor H: Advances in benign prostatic hyperplasia. UROL CLIN N AM 1995;22:237-479.

During the performance of a radical retropubic prostatectomy, a well-defined rectal laceration is noted. There is no fecal spillage. No preoperative bowel preparation was administered. This patient should be managed with completion of the prostatectomy and:

C: "primary closure of the laceration." is correct.

Rectal injuries should be encountered very infrequently during radical retropubic prostatectomy, less than .5% in most series. A two layer closure of the rectal wall is sufficient in most cases and digital anal dilation may also be used. If the edges of the rectal wound are devitalized, the patient has received previous pelvic radiation, or there is significant fecal contamination, then a diverting colostomy with Hartmann's pouch should strongly be considered. A mucous fistula is not indicated in the absence of distal obstruction.

Borland RN, Walsh PC: The management of rectal injury during radical retropubic prostatectomy. J UROL 1992;147:905-907.

A 38-year-old azoospermic man with secondary infertility has an ejaculate volume of 0.3 ml. Post ejaculate urine contains no sperm. Serum testosterone and FSH are normal, both vasa are palpable, and testicular volume is normal. Transrectal ultrasonography reveals a normal prostate, ejaculatory ducts, and dilated seminal vesicles. The next step is:

A ejaculatory duct cannulation.

B testis biopsy.

C vasography.

D seminal vesicle aspiration.

E renal ultrasound.

A 38-year-old azoospermic man with secondary infertility has an ejaculate volume of 0.3 ml. Post ejaculate urine contains no sperm. Serum testosterone and FSH are normal, both vasa are palpable, and testicular volume is normal. Transrectal ultrasonography reveals a normal prostate, ejaculatory ducts, and dilated seminal vesicles. The next step is:

D: "seminal vesicle aspiration." is correct.

The differential diagnosis of low ejaculate volume azoospermia is ejaculatory duct obstruction, hypogonadism, vasal agenesis, ejaculatory failure, and testicular failure. Hypogonadism was excluded by a normal testosterone level and the patient has palpable vasa. Retrograde ejaculation is not present because no sperm are in the post-ejaculate urine. This patient has either testicular failure or an obstruction of the ejaculatory ducts. Seminal vesicle aspiration under transrectal ultrasound guidance will reveal numerous sperm if obstruction is present and is the least invasive method to diagnose this treatable lesion.

Takihara H: The treatment of obstructive azoospermia in male infertility--past, present, and future. UROL 1998;51(5A Suppl):150-5.

An 82-year-old woman who lives in a nursing home complains of urinary urgency and incontinence. Neurologic examination is normal. Urinalysis is normal. Residual urine is 140 ml after voiding 160 ml. The most likely etiology of her symptoms is:

A detrusor instability.

B detrusor-sphincter dyssynergia.

C decreased detrusor compliance.

D detrusor instability with impaired contractility.

E intrinsic sphincter deficiency.

An 82-year-old woman who lives in a nursing home complains of urinary urgency and incontinence. Neurologic examination is normal. Urinalysis is normal. Residual urine is 140 ml after voiding 160 ml. The most likely etiology of her symptoms is:

D: "detrusor instability with impaired contractility." is correct.

Detrusor hyperactivity with impaired contractility is the most common cause of urinary incontinence in the frail elderly and presents as urge incontinence or unspecified incontinence with large postvoid residual urine. Detrusor-sphincter dyssynergia is only seen in patients with neurologic disorders.

DuBeau CE, Resnick NR: Evaluation of the causes and severity of geriatric incontinence. UROL CLIN N AM 1991;18:243.

A 53-year-old woman underwent continent cutaneous urinary diversion six months ago. She is asymptomatic, performs clean intermittent catheterization every four hours, and obtains about 200 ml with each catheterization. A routine urine culture reveals 100,000 cfu/ml of E. coli. The best treatment is:

A culture-specific antibiotics for ten days.

B urine acidification.

C increase frequency of catheterization .

D observation.

E chronic antibiotic suppression.

A 53-year-old woman underwent continent cutaneous urinary diversion six months ago. She is asymptomatic, performs clean intermittent catheterization every four hours, and obtains about 200 ml with each catheterization. A routine urine culture reveals 100,000 cfu/ml of E. coli. The best treatment is:

D: "observation." is correct.

Bacterial colonization of urinary reservoirs is common with 17/18 patients demonstrating >100,000 col/ml in one series. Because colonization frequently disappears spontaneously, no treatment is warranted. More frequent catheterization would be indicated if reservoir pressures and volumes were higher at the time of catheterization.

Akerlund S, Campanello M, Kaijser B, Johsson O: Bacteriuria in patients with a continent ileal reservoir for urinary diversion does not regularly require antibiotic treatment. BRI J UROL 1994;74:177-81.

An 11-year-old boy has an impalpable left testis. The finding which proves left testicular absence is:

A a blind-ending vas deferens.

B hypertrophy of the right testis.

C absence of the left kidney.

D XY/XO karyotype.

E blind-ending spermatic vessels.

An 11-year-old boy has an impalpable left testis. The finding which proves left testicular absence is:

E: "blind-ending spermatic vessels." is correct.

Blind-ending spermatic vessels are the sine qua non of testicular absence, and exploration must be continued until they have been observed. A blind-ending vas may simply reflect non-union with a distant testis. Non-operative criteria are currently unable to prove monorchia.

Gerber GS, Firlit CF: Anorchia, in Kursh ED, Resnick MI (eds): CURRENT THERAPY IN GENITOURINARY SURGERY. St. Louis, Mosby Year Book, 1992, pp 334-335.

Severe hypercalcemia in a patient with acute or chronic renal failure is best treated with:

A saline diuresis.

B inorganic phosphate.

C calcitonin.

D dialysis.

E steroids.

Severe hypercalcemia in a patient with acute or chronic renal failure is best treated with:

D: "dialysis." is correct.

While hypercalcemia is rare in acute or chronic renal failure, it can occur. This usually happens when patients with chronic renal failure develop massive parathyroid hypertrophy or are treated with calcium carbonate preparations to limit phosphate resorption from the gut because of the limited ability of the kidney to excrete calcium. Hypercalcemia in advanced renal failure responds best to dialysis. Calcitonin is contraindicated, as is saline diuresis. Phosphate will be poorly tolerated and steroids will not work in this setting.

Potts JT Jr: Disorders of parathyroid glands, in Petersdorf RG, Adams RD, Braunwald E, (eds): PRINCIPLES OF INTERNAL MEDICINE. New York, McGraw-Hill, 1993, p 1938.

In a 28-year-old woman with interstitial cystitis, sodium pentosan polysulfate (Elmiron) will:

A decrease urinary frequency.

B decrease dysuria.

C decrease nocturia.

D increase compliance.

E increase voided volume.

In a 28-year-old woman with interstitial cystitis, sodium pentosan polysulfate (Elmiron) will:

E: "increase voided volume." is correct.

A randomized double blind placebo controlled trial demonstrated that the only objective parameter influenced by Elmiron was an increase in voided volume. The increase in voided volume was only 20 ml.

Parsons CL, Benson G, Childs SJ, Hanno P, et al: A quantitatively controlled method to study prospectively interstitial cystitis and demonstrate the efficacy of pentosanpolysulfate. J UROL 1993;150:845-848.

A 52-year-old man has a partial penectomy for a poorly-differentiated squamous cell carcinoma of the penis invasive into the corpora cavernosa. A 2 cm inguinal lymph node is palpable in the right groin, and inguinal lymph node dissection is planned. The best way to decrease the postoperative complication of chronic leg edema in this patient is:

A preservation of the saphenous vein.

B division of the inguinal ligament during dissection.

C transposition of the sartorius muscle over the vessels after dissection.

D limiting the dissection to superficial to Scarpa's fascia.

E maintaining the plane of dissection anterior to the femoral vessels.

A 52-year-old man has a partial penectomy for a poorly-differentiated squamous cell carcinoma of the penis invasive into the corpora cavernosa. A 2 cm inguinal lymph node is palpable in the right groin, and inguinal lymph node dissection is planned. The best way to decrease the postoperative complication of chronic leg edema in this patient is:

E: "maintaining the plane of dissection anterior to the femoral vessels." is correct.

One of the most debilitating potential long-term complications of inguinal lymph node dissection is lower extremity edema. Edema is partially preventable by adherence to good operative technique. Preservation of the saphenous vein may not be a major influencing factor but ligation at the femoral triangle does not decrease edema. The operation can be performed without division of the inguinal ligament in most patients. Transposition of the sartorius muscle may help cover the bare surface of the femoral vessels but does not affect edema. The dissection should proceed inferior to Scarpa's fascia to decrease the incidence of flap necrosis. Dissection lateral and behind the femoral vessels should be avoided because of the presence of large lymphatic channels in this area.

Herr HW: Surgery of penile and urethral carcinoma, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 3397-3399.

During implantation of an artificial urinary sphincter in a man, the most common intraoperative injury is to the:

A urethra during dissection of the bulbo-spongiosus.

B urethra at the attachment to the corporal bodies.

C bladder during reservoir placement.

D femoral vessels during tube routing.

E spermatic cord during pump placement.

During implantation of an artificial urinary sphincter in a man, the most common intraoperative injury is to the:

B: "urethra at the attachment to the corporal bodies." is correct.

Urethral injury is the most common untoward event during placement of an artificial sphincter. The most difficult point in the dissection and the most frequent site of injury is where the urethra is attached to the septum of the corporal bodies at the 12 o'clock position.

Barrett DM, Licht MR: Implantation of the artificial genitourinary sphincter in men and women, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1121-1134.

In patients with posterior urethral valves, renal dysplasia is most commonly associated with:

A vesicoureteral reflux.

B hydronephrosis.

C renal duplication.

D ureteral dilation.

E urinary ascites.

In patients with posterior urethral valves, renal dysplasia is most commonly associated with:

A: "vesicoureteral reflux." is correct.

Vesicoureteral reflux and renal dysplasia often co-exist in patients with posterior urethral valves, especially in cases with unilateral reflux into a nonfunctioning kidney. This association most commonly affects the left kidney where a defect in ureteral bud embryogenesis is thought to be a significant etiological factor.

Gonzales ET Jr: Posterior urethral valves and other urethral anomalies, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2075-2076.

Three hours after being hit in the perineum, an 11-year-old boy has a swollen, ecchymotic scrotum. He has a normal urinalysis. The best next step is:

A scrotal exploration.

B isotope testicular scan.

C scrotal ultrasound.

D retrograde urethrogram.

E scrotal elevation, ice, and bedrest.

Three hours after being hit in the perineum, an 11-year-old boy has a swollen, ecchymotic scrotum. He has a normal urinalysis. The best next step is:

C: "scrotal ultrasound." is correct.

A scrotal ultrasound will be the most helpful of the above studies to determine the presence of hematocele and if the tunica albuginea of the testicles is intact. These findings will direct further management.

Rozanski T, Bloom DA, Colodny A: Surgery of the scrotum and testis in children, in Walsh PC, Retik AB, Vaughan ED, Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 2208.

A 28-year-old man undergoes orchiectomy for anaplastic seminoma. Abdominal CT scan and chest x-ray are normal. Beta- hCG falls from 500 to 12 mIU/ml (normal < 2 mIU/ml) and AFP falls from 300 to 225 ng/ml (normal < 25 ng/ml) ten days post-orchiectomy. The next step is:

A repeat tumor markers in two weeks.

B retroperitoneal lymphadenectomy.

C cisplatinum-based chemotherapy.

D ultrasound of contralateral testis.

E radiation therapy.

A 28-year-old man undergoes orchiectomy for anaplastic seminoma. Abdominal CT scan and chest x-ray are normal. Beta- hCG falls from 500 to 12 mIU/ml (normal < 2 mIU/ml) and AFP falls from 300 to 225 ng/ml (normal < 25 ng/ml) ten days post-orchiectomy. The next step is:

C: "cisplatinum-based chemotherapy." is correct.

Seminoma does not produce alpha-fetoprotein and thus this patient must be managed as a nonseminomatous germ cell tumor (NSGCT). A very valuable prognostic tool in the staging of clinically Stage I (TxN0M0) NSGCT is the rate of decline of serum tumor markers (AFP and beta-hCG). The half-life of beta-hCG is 18-36 hours and it is five to seven days for AFP. If tumor markers do not decline at an appropriate rate as in this case, the suspicion of residual disease must be high. While persistently elevated beta-hCG can be unrelated to residual disease, persistent elevations of AFP almost always portend residual disease. In this circumstance, optimal therapy is cis-platinum-based chemotherapy as almost all patients treated with retroperitoneal lymphadenectomy will relapse.

Saxman SB, Nichols CR, Foster RS, Messemer JE, et al: The management of patients with clinical Stage I nonseminomatous testicular tumors and persistently elevated serologic markers. J UROL 1996;155:587-89.

A 24-year-old woman has formed five ammonium acid urate stones. The test which will best elucidate the underlying cause of her recurrent stone disease is:

A ammonium chloride load.

B thiazide challenge.

C urinary phenolphthalein.

D arterial blood gas.

E nitroprusside test.

A 24-year-old woman has formed five ammonium acid urate stones. The test which will best elucidate the underlying cause of her recurrent stone disease is:

C: "urinary phenolphthalein." is correct.

Ammonium acid urate stones are often seen in patients with significant metabolic acidosis. A common cause of acidosis in young women is chronic laxative abuse which will cause gastrointestinal loss of fluid and electrolytes with subsequent intracellular acidosis. Laxative abuse should be suspected whenever a young woman has ammonium urate renal calculi with non-infected urine. Phenolphthalein is a urinary marker for laxative abuse.

Dick WH, Lingeman JE, Preminger GM, et al: Laxative abuse as a cause for ammonium urate renal calculi. J UROL 1990;143:244-247.

The most useful procedure to correct a recurrent 2-1/2 cm stricture of an intrarenal ureteropelvic junction following a previously unsuccessful pyeloplasty is:

A dismembered pyeloplasty.

B ureterocalycostomy.

C Foley Y-V plasty.

D Davis intubated ureterotomy.

E spiral flap pyeloplasty.

The most useful procedure to correct a recurrent 2-1/2 cm stricture of an intrarenal ureteropelvic junction following a previously unsuccessful pyeloplasty is:

B: "ureterocalycostomy." is correct.

Recurrent ureteropelvic junction obstruction is usually associated with a significant amount of periureteral and peripelvic fibrosis. When the pelvis is also intrarenal and there is an associated stricture of the upper ureter, dismembered or flap pyeloplasty will not provide a good repair. A Davis intubated ureterotomy is a possibility, but it is not a highly reliable procedure. Ureterocalycostomy is the best choice. It is important to resect renal cortex adjacent to the calyx before performing the ureterocalycostomy.

Novick AC, Streem SB: Surgery of the kidney, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 3049-3050.

Patients on chronic hemodialysis may have a tendency to bleed excessively during surgery. This is due to:

A thrombocytopenia.

B inadequate levels of Vitamin K.

C hypofibrinogenemia.

D thromboplastin deficiency.

E a qualitative platelet defect.

Patients on chronic hemodialysis may have a tendency to bleed excessively during surgery. This is due to:

E: "a qualitative platelet defect." is correct.

In patients with chronic renal failure, blood clotting is abnormal because of platelet dysfunction resulting from a deficiency of von Willebrand factor multimers and the presence of small molecules that impair platelet function. Because of the qualitative platelet defect, the most sensitive test to predict the occurrence of bleeding is the determination of a bleeding time.

Edelstein CL, Alkhunaizi A, Yaqoob MM, Shapiro JI, et al: Etiology, pathogenesis, and management of renal failure, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 328.

Which is best suited to the Wallace (conjoined) type of uretero- intestinal anastomosis for urinary diversion:

A colon conduits.

B revision of ureteroileal anastomosis.

C dilated ureters.

D history of bladder CIS.

E prior radiation therapy.

Which is best suited to the Wallace (conjoined) type of uretero- intestinal anastomosis for urinary diversion:

C: "dilated ureters." is correct.

The utility of the Wallace technique is most apparent in cases of dilated ureters requiring larger areas of the ileal segment for individual anastomosis. The Wallace anastomosis has the lowest complication rate of any of the ureterointestinal anastomotic techniques. Stricture formation is approximately 3%, deterioration of the upper tracts is 4%, and leakage is 2%. The Wallace technique is not recommended for patients with carcinoma in situ or who have a high likelihood of recurrent tumor in the ureter.

McDougal WS: Use of intestinal segments and urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 3141-3142.

deKernion JB, Trapasso JG: Urinary diversion and continent reservoir conduits, in Gillenwater JY, Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY, ed 3. St. Louis, Mosby Year Book, 1996, p 1471.

A 58-year-old insulin- dependent diabetic man with a history of two superficial transitional cell carcinomas (TCC) of the bladder treated by TURBT has gross hematuria. The serum creatinine level is 1.7 mg/dl. At cystoscopy, the bladder appears normal except for blood coming from the right ureteral orifice. An IVP reveals prompt bilateral renal function and a radiolucent filling defect in the lower third of the right ureter. Ureteroscopy confirms the presence of a tumor, and biopsy reveals Grade 3 TCC. The preferred management is:

A ureteral stent and intravesical chemotherapy.

B ureteroscopic tumor resection.

C distal ureterectomy and reimplant.

D segmental ureterectomy and transureteroureterostomy.

E right nephroureterectomy.

A 58-year-old insulin- dependent diabetic man with a history of two superficial transitional cell carcinomas (TCC) of the bladder treated by TURBT has gross hematuria. The serum creatinine level is 1.7 mg/dl. At cystoscopy, the bladder appears normal except for blood coming from the right ureteral orifice. An IVP reveals prompt bilateral renal function and a radiolucent filling defect in the lower third of the right ureter. Ureteroscopy confirms the presence of a tumor, and biopsy reveals Grade 3 TCC. The preferred management is:

C: "distal ureterectomy and reimplant." is correct.

Distal ureteral tumors should be treated by distal ureterectomy and ureteroneocystostomy assuming no evidence of multifocality. Transureteroureterostomy is not recommended with urothelial malignancy. Endourological techniques are indicated only for lower grade tumors. Nephroureterectomy, although reducing the risk of ipsilateral superficial recurrence, yields no survival advantage over distal ureterectomy and would reduce renal reserve in a patient with diabetes and renal insufficiency.

Messing EM, Catalona W: Urothelial tumors of the urinary tract, in Walsh PC, Retik AB,Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2391-2392.

Narayan P: Editorial:Transitional cell carcinoma. J UROL 1996;156:389.

A 50-year-old man who underwent radical cystoprostatectomy and orthoptic bladder reconstruction five years ago develops congestive heart failure. The best treatment for his persistent hyperchloremic metabolic acidosis is:

A furosemide.

B Bicitra.

C sodium bicarbonate.

D chlorpromazine.

E Polycitra.

A 50-year-old man who underwent radical cystoprostatectomy and orthoptic bladder reconstruction five years ago develops congestive heart failure. The best treatment for his persistent hyperchloremic metabolic acidosis is:

D: "chlorpromazine." is correct.

The treatment of hyperchloremic metabolic acidosis requires administration of alkalizing agents or blockers of chloride transport. In patients in whom excessive sodium loads are undesirable, nicotinic acid or chlorpromazine may be administered to control the acidosis. Nicotinic acid and chlorpromazine inhibit cyclic AMP and thereby impede chloride transport.

McDougal WS: Use of intestinal segments and urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1997, pp 3121-3158.

A 28-year-old man with primary infertility has a microdeletion of the DAZ region of the Y chromosome (AZFc). One semen analysis reveals azoospermia. His wife is scheduled for in vitro fertilization. Prior to testicular sperm extraction, he should have:

A serum dihydrotestosterone level.

B repeat semen analysis with centrifugation.

C renal ultrasound.

D X chromosome analysis.

E transrectal ultrasound.

A 28-year-old man with primary infertility has a microdeletion of the DAZ region of the Y chromosome (AZFc). One semen analysis reveals azoospermia. His wife is scheduled for in vitro fertilization. Prior to testicular sperm extraction, he should have:

B: "repeat semen analysis with centrifugation." is correct.

Y chromosome microdeletions are common in severe male infertility. Although many men with AZFc deletions are azoospermic, occasional sperm are often found in the ejaculate and may obviate the need for testicular sperm extraction. Renal, prostatic and X chromosome abnormalities are rarely found in association with Y microdeletions.

Reijo R, Alagappan RK, Ratrizio P, et al: Severe oligospermia resulting from deletions of azoospermia factor gene on Y chromosome. LANCET 1996;347:1290-1293.

Girardi SK, Mielnik A, Schlegel PN: Submicroscopic deletions of the Y chromosome in infertile men. HUM REPROD 1997;12:1635-41.

A 32-year-old man has pulsatile retroperitoneal bleeding immediately after Veress needle insufflation and trocar placement in the infraumbilical region for a laparoscopic procedure. The vessel most likely injured is the:

A umbilical artery.

B epigastric artery.

C left iliac vein.

D right iliac artery.

E sacral artery.

A 32-year-old man has pulsatile retroperitoneal bleeding immediately after Veress needle insufflation and trocar placement in the infraumbilical region for a laparoscopic procedure. The vessel most likely injured is the:

D: "right iliac artery." is correct.

Vascular complications of laparoscopy are relatively uncommon but can be life-threatening. Complications most commonly occur during Veress needle or peri-umbilical trocar placement. They are likely to affect either the right iliac artery, left iliac vein or inferior vena cava because of their location under the umbilicus. Pulsatile bleeding suggests an arterial source.

Chapron CM, Pierre F, Lacroix S, Querleu D, et al: Major vascular injuries during gynecologic laparoscopy. J AM COLL SURG 1997;185:461-5.

Geers J, Holden C: Major vascular injury as a complication of laparoscopic surgery: A report of three cases and review of the literature. AM SURG 1996;62:377-9.

A 28-year-old man develops a persistent painless erection two weeks following a bicycle accident. Physical examination demonstrates perineal ecchymosis. Aspiration of corporal blood reveals pO_2 = 85 mm Hg, pCO_2 = 40 mm Hg, pH = 7.41. The best management is:

A oral terbutaline.

B intracavernous phenylephrine.

C cavernosal-glanular shunt.

D selective arterial embolization.

E cavernosal-spongiosum shunt.

A 28-year-old man develops a persistent painless erection two weeks following a bicycle accident. Physical examination demonstrates perineal ecchymosis. Aspiration of corporal blood reveals pO2 = 85 mm Hg, pCO2 = 40 mm Hg, pH = 7.41. The best management is:

D: "selective arterial embolization." is correct.

Priapism that follows blunt perineal trauma is usually high flow or non-ischemic. This is caused by arterial rupture directly into cavernous tissues. The presentation is usually delayed from the initial event. Aspiration of corporal blood demonstrates satisfactory oxygenation. Venous channels may partly compensate for high flow and there is usually no pain associated with this condition. This can be corrected with selective embolization of the offending arterial branch. Most patients regain adequate erection after embolization, but this may take up to several months. In a small percentage of patients, the erection may resolve spontaneously.

Lue TF: Physiology of penile erection and pathophysiology of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1172-1174.

A 65-year-old woman has left flank pain and gross hematuria. CT scans demonstrate a 1.5 cm pulmonary nodule, a 7 cm enhancing solid left renal mass, and normal right kidney. There is no other clinical or radiograph evidence of metastasis. The best management is:

A systemic immunotherapy.

B combination immunotherapy and chemotherapy.

C nephrectomy and systemic immunotherapy.

D renal angioinfarction and systemic immunotherapy.

E nephrectomy and pulmonary resection.

A 65-year-old woman has left flank pain and gross hematuria. CT scans demonstrate a 1.5 cm pulmonary nodule, a 7 cm enhancing solid left renal mass, and normal right kidney. There is no other clinical or radiograph evidence of metastasis. The best management is:

E: "nephrectomy and pulmonary resection." is correct.

Surgical excision is the treatment of choice for patients with renal cell carcinoma and a solitary metastasis, producing five year disease-free survivals of 35%. Systemic therapy alone (immunotherapy with or without chemotherapy) produces complete responses in only up to 15% of patients, and responses in the primary tumor are rare. Angioinfarction may be a useful surgical adjunct in large tumors, those which extend into the renal hilum, those associated with vena caval thrombi, or for palliation of pain or bleeding, but is not a good form of local control from the cancer standpoint.

Kavolius JP, Mastorakos DP, Pavlovich C, Russo P, et al: Resection of metastatic renal cell carcinoma. J CLIN ONCOL 1998;16:2261.

A 59-year-old woman has acute pyelonephritis. Her WBC is 18,000, serum creatinine is 1.2 mg/dl and urine culture shows > 100,000 colonies/cc of Enterococcus faecalis. Pending sensitivities, antibiotic treatment should be:

A ciprofloxacin 500 mg p.o. b.i.d.

B amoxicillin 2 gm p.o. t.i.d.

C ampicillin 1 gm i.v. q 4 hours and gentamicin 350 mg i.v. q day.

D ceftazidime 1 gm i.v. q 8 hours.

E ampicillin 1 gm i.v. q 4 hours and gentamicin 80 mg i.v. q 8 hours.

A 59-year-old woman has acute pyelonephritis. Her WBC is 18,000, serum creatinine is 1.2 mg/dl and urine culture shows > 100,000 colonies/cc of Enterococcus faecalis. Pending sensitivities, antibiotic treatment should be:

C: "ampicillin 1 gm i.v. q 4 hours and gentamicin 350 mg i.v. q day." is correct.

Treatment of Enterococcus infections should involve two synergistically active agents, typically a penicillin derivative and an aminoglycoside. Single daily dosing of aminoglycosides (at a dose of 5 mg/kg/day for gentamicin) provides optimum concentration- dependent bactericidal activity, longer dosing intervals due to post-antibiotic effect, and prevention of bacterial adaptive resistance. With longer dosage intervals, toxicity may also be delayed or reduced.

Preston SL, Briceland LL: Single daily dosing of aminoglycosides. PHARMACOTHERAPY 1995;5(3):297-316.

The most important contraindication to orthophosphate therapy in patients with recurrent renal lithiasis is:

A diarrhea.

B osteodystrophy.

C immature bone development.

D hypercalciuria.

E urea-splitting urinary infection.

The most important contraindication to orthophosphate therapy in patients with recurrent renal lithiasis is:

E: "urea-splitting urinary infection." is correct.

Orthophosphate therapy is contraindicated in patients with nephrolithiasis complicated by UTI and in those individuals with renal insufficiency. This could accelerate struvite stone formation and be dangerous for patients with renal insufficiency who may have increased serum phosphate levels.

Hruska KA, Seltzer JR, Grieff M: Nephrolithiasis, in Schrier RW, Gottschalk CW (eds): DISEASE OF THE KIDNEY, ed 6. Boston, Little, Brown & Co, 1997, p 753.

Metabolic alkalosis is most frequently associated with:

A hyperventilation.

B chronic obstructive pulmonary disease.

C hyperkalemia.

D hypokalemia.

E hypocarbia.

Metabolic alkalosis is most frequently associated with:

D: "hypokalemia." is correct.

When metabolic alkalosis occurs the body's response is increased pCO_2 and pH. Hypoventilation occurs thus increasing pCO_2. Metabolic alkalosis often is associated with volume reduction which stimulates the renin-angiotensin-aldosterone system which promotes K^+ excretion. Metabolic alkalosis is seldom due to COPD.

Blumenfeld JD, Vaughan ED Jr: Renal Physiology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 297.

A 28-year-old man undergoes a right radical orchiectomy for pure seminoma. The serum AFP and hCG are normal, and an abdominal CT scan reveals a 4 cm mass in the interaortocaval region. Tomograms of the chest reveal three nodules at the base of the right lung. The best management is:

A needle biopsy of pulmonary nodule.

B radiation to the retroperitoneum and chest.

C retroperitoneal lymphadenectomy followed by platinum-based chemotherapy.

D retroperitoneal lymphadenectomy followed by chest radiotherapy.

E platinum-based chemotherapy.

Following the removal of a frontal lobe meningioma, detrusor function will most likely be:

A coordinated with urgency incontinence.

B coordinated but incomplete with increased residual volume.

C uncoordinated due to detrusor-sphincter dyssynergia.

D uncoordinated due to detrusor areflexia.

E uncoordinated due to primary bladder neck dyssynergia.

Following the removal of a frontal lobe meningioma, detrusor function will most likely be:

A: "coordinated with urgency incontinence." is correct.

Areas above the brainstem are generally inhibitory in function relative to detrusor function. Injuries as a result of trauma or surgery to areas above the brainstem usually result in precipitous, complete voiding related to detrusor hyperreflexia with sphincteric coordination facilitated by an intact brainstem.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 953-1006.

Five days after intercourse, a 40-year-old man develops a painful necrotic penile ulcer and painful inguinal lymphadenopathy. Gram stain of an exudate from the lesion reveals gram-negative coccobacillus. Dark-field examination and Tzanck smears are negative. The treatment of choice is:

A penicillin.

B tetracycline.

C acyclovir.

D erythromycin.

E sulfisoxazole.

Five days after intercourse, a 40-year-old man develops a painful necrotic penile ulcer and painful inguinal lymphadenopathy. Gram stain of an exudate from the lesion reveals gram-negative coccobacillus. Dark-field examination and Tzanck smears are negative. The treatment of choice is:

D: "erythromycin." is correct.

This patient has chancroid. The drug of choice is erythromycin 500 mg p.o. q.i.d. for seven days or ceftriaxone 250 mg I.M. once. The other antibiotics will not be effective to eliminate the organism which is haemophilus ducreyi. Acyclovir is effective against the herpes virus.

Berger RE: Sexually transmitted diseases: The classic diseases, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 676-677.

A 35-year-old man has persistent retroperitoneal lymphadenopathy after cis-platinum-based chemotherapy for nonseminomatous germ cell tumor. The parameter most predictive of finding only fibrosis in the retroperitoneum is:

A normalization of serum hCG.

B 50% reduction in size of the mass on CT scan.

C pure embryonal cell carcinoma in the primary tumor.

D normalization of serum alpha-fetoprotein.

E teratoma in the primary tumor.

A 35-year-old man has persistent retroperitoneal lymphadenopathy after cis-platinum-based chemotherapy for nonseminomatous germ cell tumor. The parameter most predictive of finding only fibrosis in the retroperitoneum is:

C: "pure embryonal cell carcinoma in the primary tumor." is correct.

Patients with a nonseminomatous germ cell tumor who have a greater than 90% reduction in the size of the retroperitoneal mass with chemotherapy and have no teratomatous elements in their tumor are almost never found to have either viable cancer or teratoma in the residual mass at the time of retroperitoneal lymph node resection. Normalization of the serum markers does not predict for the presence of fibrosis.

Donohue JP, Rowland RB, Kopecky K, Steidle CP, et al: Correlation of computerized tomographic changes and histological findings in 80 patients having radical retroperitoneal lymph node dissection after chemotherapy for testis cancer. J UROL 1987;137:1176-1179.

Richie JP: Neoplasms of the testis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2433-2436.

The validity of a creatinine clearance test can best be determined by simultaneously measuring or calculating the:

A total creatinine excreted.

B total sodium excreted.

C total urea excreted.

D total urine volume excreted.

E average urine osmolality.

The validity of a creatinine clearance test can best be determined by simultaneously measuring or calculating the:

A: "total creatinine excreted." is correct.

The total amount of creatinine excreted each 24 hours is dependent upon muscle mass and is generally constant. An incomplete collection is suggested by an incorrect amount of total creatinine in a 24-hour specimen; the normal production of creatinine is 1.0 mg/kg/hr.

Kasiske BL, Keane WF: Laboratory assessment of renal disease: Clearance, urinalysis and renal biopsy, in Brenner B (ed): THE KIDNEY, ed 5. Philadelphia, WB Saunders Co, 1996, pp 1137-1149.

The structure found immediately lateral to the femoral artery as it passes posterior to the inguinal ligament is the:

A sartorius muscle.

B femoral vein.

C femoral nerve.

D iliohypogastric nerve.

E lateral femoral cutaneous nerve.

The structure found immediately lateral to the femoral artery as it passes posterior to the inguinal ligament is the:

C: "femoral nerve." is correct.

The anatomy of the femoral canal from lateral to medial is the femoral nerve, the femoral artery, the femoral vein and lymphatic channels. This is important when blood draws from the femoral vein or artery are considered. Dissection in the area of the femoral canal should also consider the saphenous vein junction with the femoral vein just inferior to the inguinal ligament.

Redman JF: Anatomy of the genitourinary system, in Gillenwater JY, Grayhack JT, Howards SS, Duckett JW (eds): ADULT AND PEDIATRIC UROLOGY, ed 3. St. Louis, Mosby Year Book, 1996, p 56.

A 34-year-old HIV positive man has fever, dysuria, and diarrhea. Physical examination reveals a tender prostate; the urine culture is negative. Transrectal ultrasonography demonstrates multiple hypoechoic lesions confined to the posterior prostate gland. The next step is administration of broad spectrum I.V. antibiotics and:

A insertion of suprapubic tube.

B insertion of urethral catheter.

C needle aspiration of the prostate for culture.

D transurethral unroofing of abscess.

E transrectal drainage of abscess.

A 34-year-old HIV positive man has fever, dysuria, and diarrhea. Physical examination reveals a tender prostate; the urine culture is negative. Transrectal ultrasonography demonstrates multiple hypoechoic lesions confined to the posterior prostate gland. The next step is administration of broad spectrum I.V. antibiotics and:

D: "transurethral unroofing of abscess." is correct.

The incidence of prostatic abscess has declined but it is still seen in immunodeficient patients such as those with immunodeficiency virus (HIV). Transrectal ultrasonography is now the imaging modality of choice for the evaluation of patients with suspected prostatic abscess. Antibiotic therapy alone will not be sufficient if an abscess is found. Suprapubic urinary diversion is appropriate in patients with acute bacterial prostatitis without an abscess. Transurethral unroofing is the treatment of choice in patients with an abscess confined to the prostate gland while open drainage is required for patients with more extensive lesions.

Trauzzi SJ, Kay CJ, Kaufman DG, Lowe FC: Management of prostatic abscess in patients with immunodeficiency syndrome. UROL 1994;43:629 633.

A seven-year-old boy who has had three prior hypospadias repairs develops a small mid-shaft urethrocutaneous fistula. A fistula repair is performed without urinary diversion. On the fifth day, the fistula reopens and persists despite three weeks of urethral catheter drainage. The best treatment is:

A immediate surgical reclosure of the fistula.

B placement of a suprapubic tube.

C bury penis in scrotum.

D replace the urethral catheter for another 3-4 weeks.

E delay surgical repair for at least six months.

A seven-year-old boy who has had three prior hypospadias repairs develops a small mid-shaft urethrocutaneous fistula. A fistula repair is performed without urinary diversion. On the fifth day, the fistula reopens and persists despite three weeks of urethral catheter drainage. The best treatment is:

E: "delay surgical repair for at least six months." is correct.

In a boy who has had three hypospadias repairs with the probability of marked fibrosis, options "a" through "d" would not be acceptable and would certainly lead to the continuation of the urethrocutaneous fistula. Immediate surgical reclosure of the fistula is to be condemned, particularly one month post-surgery when there is maximum edema and poor tissue tensile strength. A waiting period of at least six months or perhaps longer is prudent to allow for neovascularity, subsidence of edema, and the best chance at reclosure. In all urethrocutaneous fistulas that do not close, distal obstruction must be ruled out as well as the presence of a distal urethral diverticulum acting as an obstruction.

Duckett JW: Hypospadias, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 2115.

The presence of nephrogenic rests (nodular renal blastema) may predispose to:

A adenocarcinoma.

B sarcoma.

C adenoma.

D hamartoma.

E Wilms' tumor.

The presence of nephrogenic rests (nodular renal blastema) may predispose to:

E: "Wilms' tumor." is correct.

Lesions apparently representing Wilms' tumor precursors have been recognized for many years. They have been found in 1% of kidneys in infants on postmortem and in 30-40% of kidneys removed for Wilms' tumor. The terminology for these lesions has evolved over the years. These lesions were previously termed persistent nodular renal blastema, Wilms' tumorlet or nephroblastomatosis if there were diffuse lesions. The current preferred term is nephrogenic rest which is defined as foci of abnormally persistent nephrogenic cells that can form a Wilms' tumor. Beckwith has estimated that approximately 1 in 80 nephrogenic rests will develop into Wilms' tumor.

Beckwith JB: Precursor lesions of Wilms' tumor: Clinical and biological implications. MED PED ONCOL 1993;21:158-168.

A 24-year-old sexually active, asymptomatic woman on oral contraceptives has a long history of foul smelling urine. Her urine pH is 8.0. The most likely diagnosis is:

A asymptomatic bacteriuria with urease producing organism.

B trichomonal vaginitis.

C progestational effect of birth control pill.

D excessive dietary red meat.

E vegetarian diet.

A 24-year-old sexually active, asymptomatic woman on oral contraceptives has a long history of foul smelling urine. Her urine pH is 8.0. The most likely diagnosis is:

E: "vegetarian diet." is correct.

The urologist is very often presented with an asymptomatic patient who complains only of foul smelling urine. A foul odor is suggestive of infection but may be caused by vaginitis (in which case the urine actually does not have foul odor) or consumption of food such as asparagus. The specific gravity is not helpful. An alkaline pH over 8.0 is suggestive of a urease producing micro-organism such as Proteus or Providentia (which would be very unlikely in an asymptomatic 24-year-old patient) or may also be caused by a vegetarian diet. Many people have recently switched their diet and now subsist on a virtually totally vegetarian diet and tend to have an alkaline urine. This fact is very helpful to urologists in helping to explain a concern over a patient's urine odor. The hydrogen ion content of the urine is caused principally by sulfur containing amino acids in animal proteins. The cause of the odor is unknown.

Kunin CM: URINARY TRACT INFECTIONS: DETECTION, PREVENTION AND MANAGEMENT, ed 5. Baltimore, Williams & Wilkins, 1997, pp 51-52.

A 13-year-old boy with progressive onset of left testicular pain for six hours and nausea should:

A. be observed for four hours to assess symptom progression.

B. undergo scrotal exploration.

C. be given anti-inflammatory medication and rest.

D. be given antibiotic treatment.

E. undergo inguinal cord block and testicular detorsion.

A 13-year-old boy with progressive onset of left testicular pain for six hours and nausea should:

B: "undergo scrotal exploration." is correct.

This boy's age, and the presence of nausea, are indications of the high likelihood of testicular torsion as a cause of his symptoms. Surgical exploration is both diagnostic and therapeutic. Observation, even for a short time, is not appropriate and provides little benefit in terms of allowing better clinical separation of causes of his symptoms. In this setting the diagnosis of torsion of one of the appendages should only be made operatively. There is no evidence to support the diagnosis of this being of an infectious etiology. Testicular detorsion risks incomplete therapy and a false sense of improvement due to the cord block.

Bloom DA, Wan J, Key D: Disorders of the male external genitalia and inguinal canal, in Kelalis PP, King LR, Belman AB (eds): CLINICAL PEDIATRIC UROLOGY, ed 3. Philadelphia, WB Saunders Co, 1992, pp 1015-1049.

Calcium oxalate calculi appear on MRI scan as:

A high intensity T1 weighted image.

B low intensity T2 weighted image.

C low core intensity image.

D poorly visualized image.

E bright bone-like signal image.

Calcium oxalate calculi appear on MRI scan as:

D: "poorly visualized image." is correct.

Non-contrast CT images can identify all calcium oxalate calculi as bright intensity signals similar to bone. Additionally, uric acid and matrix calculi that are frequently radiolucent on scout radiographs easily image with CT. MRI scans are unable to reliably identify calcium oxalate or other stone types.

Stoller ML, Floth A, Hricak H, Andersen M, et al: MRI and renal calculi: An in vitro study. J OF STONES AND LITHOTRIPSY 1991;3(2):162-64.

The principal mechanism for urinary excretion of an increased acid load in chronic acidosis is:

A reabsorption of filtered HCO3.

B increased sodium reabsorption in the collecting duct.

C increased aldosterone secretion.

D increased formation of ammonia.

E stimulation of collecting duct carbonic anhydrase.

The principal mechanism for urinary excretion of an increased acid load in chronic acidosis is:

D: "increased formation of ammonia." is correct.

An adaptive increase in collecting tubule cell ammonia formation is the principal mechanism for the excretion of increased acid loads in chronic acidosis. Although enhanced sodium reabsorption and aldosterone may increase hydrogen ion secretion in the collecting duct, buffer availability (e.g., ammonia) is still the limiting factor. The majority of filtered bicarbonate is reabsorbed in the proximal tubule under normal circumstances, with little capability for increased reabsorption with increased acid load. The collecting duct epithelium does not contain carbonic anhydrase.

Alpern RJ, Rector FC: Renal acidification mechanisms, in Brenner BM (ed): THE KIDNEY, ed 5. Philadelphia, WB Saunders Co, 1996, pp 408-471.

The antimicrobial agent which can be used at the usual dosage in an azotemic patient is:

A nitrofurantoin.

B sulfisoxazole.

C doxycycline.

D trimethoprim.

E diflucan.

The antimicrobial agent which can be used at the usual dosage in an azotemic patient is:

C: "doxycycline." is correct.

All the antibiotics listed including most tetracycline's, except doxycycline, are excreted primarily in the urine and their blood levels increase in the presence of renal insufficiency. Doxycycline is excreted mainly in the feces and does not require consideration for a dosage reduction in an azotemic patient.

Berkow R, Fletcher AJ (eds): THE MERCK MANUAL, MERCK RESEARCH LABORATORIES. Rahway, NJ, 1992, pp 24-55.

A 36-year-old woman undergoes partial nephrectomy with placement of an internal ureteral stent. Postoperative KUB demonstrates proper stent position. One week following surgery, urine draining from the flank increases from 50 to 1100 cc/day and remains 800 cc/day for the next three days. The next step is:

A placement of urethral catheter.

B surgical exploration.

C observation.

D remove ureteral stent.

E placement of percutaneous nephrostomy.

A 36-year-old woman undergoes partial nephrectomy with placement of an internal ureteral stent. Postoperative KUB demonstrates proper stent position. One week following surgery, urine draining from the flank increases from 50 to 1100 cc/day and remains 800 cc/day for the next three days. The next step is:

A: "placement of urethral catheter." is correct.

The above situation describes a urine leak following a partial nephrectomy which may occur in up to 17% of patients. An internal ureteral stent was placed and KUB confirmed the appropriate placement of the stent following surgery. In this situation, the ongoing significant urine leak may be due to obstruction of the stent or to reflux of urine from the bladder. Thus, placing a urethral catheter should be the first step. If the urinary leakage does not decrease, then stent removal and replacement are appropriate. Placement of a percutaneous nephrostomy tube should be avoided unless there is obstruction and a new stent cannot be passed from below. Surgical exploration is not warranted unless all other efforts are unsuccessful.

Campbell SC, Novick AC, Streem SB, Klein EA, et al: Complications of nephron sparing surgery for renal tumors. J UROL 1994;151:1177-1180.

Proliferation of the prostate in vitro is inhibited by:

A transforming growth factor-beta.

B keratinocyte growth factor.

C basic fibroblast growth factor.

D epidermal growth factor.

E insulin growth factor.

Proliferation of the prostate in vitro is inhibited by:

A: "transforming growth factor-beta." is correct.

All of the growth factors except transforming growth factor-beta act as prostatic mitogens in vitro.

Partin W, Coffey DS: The molecular biology, endocrinology, and physiology of the prostate and seminal vesicles, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1381-1428.

A 25-year-old man has a fractured pelvis. After an infusion of 2500 ml of Ringer's lactate, his blood pressure is 70/40 mm Hg and his urinary output is 20 ml/hour. Two units of type specific blood are given over 45 minutes. The blood pressure increases to 85/50 mm Hg, and the CVP increases from 3 to 6 cm H2O. He should be given an infusion of:

A Ringer's lactate.

B fresh frozen plasma.

C 0.5 normal saline.

D more blood.

E sodium bicarbonate.

A 25-year-old man has a fractured pelvis. After an infusion of 2500 ml of Ringer's lactate, his blood pressure is 70/40 mm Hg and his urinary output is 20 ml/hour. Two units of type specific blood are given over 45 minutes. The blood pressure increases to 85/50 mm Hg, and the CVP increases from 3 to 6 cm H2O. He should be given an infusion of:

D: "more blood." is correct.

If more than 2500-3000 ml of fluid are needed for resuscitation, blood and blood products will be required. Continued hypotension and a CVP less than < 6 cm H2O are most consistent with hypovolemic shock. The most appropriate therapy is the infusion of more blood. Fresh frozen plasma will have to be administered soon because of dilutional coagulopathy which often occurs after massive transfusions. If over 10 units of blood are administered, platelet packs may be necessary. Sodium bicarbonate infusion will correct metabolic acidosis, but this patient's primary problem remains hypovolemic shock.

Shires GT III, Barber A, Shires GT: Fluid and electrolyte management of the surgical patient, in Schwartz SI (ed): PRINCIPLES OF SURGERY, ed 7. New York, McGraw Hill, 1999, p 62.

Pretransplant bilateral nephrectomy is most commonly necessary for:

A glomerulonephritis.

B polycystic kidney disease.

C medullary sponge kidney.

D diabetes.

E recurrent pyelonephritis.

Pretransplant bilateral nephrectomy is most commonly necessary for:

E: "recurrent pyelonephritis." is correct.

Of the conditions listed, the only solid indication for pretransplant nephrectomy is the patient with a well-documented history of pyelonephritis. Pretreatment bilateral nephrectomy is most important in those patients with active infection. The hazards of active infection and immunosuppression certainly justify the risk. There is no indication for nephrectomy in the patient with glomerulonephritis. Patients with polycystic disease do not require bilateral nephrectomy prior to transplantation unless the kidneys are infected, contain abscesses or are too large. Cases of diabetes and medullary cystic disease not associated with UTI need not have pretransplant nephrectomy.

Barry JM: Renal transplantation, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 505-530.

A 30-year-old man involved in an automobile accident sustains fracture dislocations of vertebral bodies T- 12, L- 1, and L- 2. One year after the injury, the most likely sequela is:

A detrusor-sphincter dyssynergia.

B autonomic dysreflexia.

C retrograde ejaculation.

D detrusor areflexia.

E lack of seminal fluid emission.

A 30-year-old man involved in an automobile accident sustains fracture dislocations of vertebral bodies T-12, L- 1, and L- 2. One year after the injury, the most likely sequela is:

D: "detrusor areflexia." is correct.

The sacral (S-2 to S-4) spinal cord parasympathetic cell bodies are anatomically located at the level of vertebrae T-12, L-1 and L -2. A spinal cord injury at this level would be expected to injure the parasympathetic outflow to the bladder and the correct answer is, therefore, detrusor areflexia. Lesions above the level of the sacral spinal cord can be associated with detrusor-sphincter dyssynergia. In order for autonomic dysreflexia to occur the lesion must be above the sympathetic outflow tract which is much higher than the injury sustained by this patient. The sympathetic innervation is not affected by this lesion and, therefore, retrograde ejaculation does not occur. However, many of these patients are anejaculatory due to interruption of afferent nerve supply.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its treatment, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 953-1006.

A child with renal insufficiency, acidosis, and a small, noncompliant bladder requires bladder augmentation. The most physiologically acceptable gastrointestinal segment to use is:

A stomach.

B jejunum.

C ileum.

D cecum.

E sigmoid.

A child with renal insufficiency, acidosis, and a small, noncompliant bladder requires bladder augmentation. The most physiologically acceptable gastrointestinal segment to use is:

A: "stomach." is correct.

Renal insufficiency and acidosis are relative contraindications to the use of small or large bowel segments for bladder augmentation because these segments absorb urinary electrolytes. Gastric mucosa, on the other hand, actually secretes chloride and functions as a barrier to its absorption and to the absorption of ammonium as well. After gastrocystoplasty, serum chloride levels are shown to decrease and CO2 levels increase in patients with renal insufficiency. In this subgroup of patients requiring bladder augmentation, stomach appears to be the most appropriate intestinal segment.

Rink RC, Adams MC: Augmentation cystoplasty, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 3167-3186.

In a prepubertal male with bilateral intra-abdominal testes the most probable response to exogenous hCG (human chorionic gonadotrophin) would be:

A increase in serum testosterone.

B decrease in serum testosterone.

C no change in serum testosterone.

D bilateral testicular descent.

E unilateral testicular descent.

In a prepubertal male with bilateral intra-abdominal testes the most probable response to exogenous hCG (human chorionic gonadotrophin) would be:

A: "increase in serum testosterone." is correct.

Administration of hCG to a prepubertal male with bilateral intra-abdominal undescended testes would not likely result in descent of either testis. It would be expected to stimulate increased testosterone production by intra-abdominal testes. In the presence of a normal male phenotype and karyotype and an elevated serum FSH, the failure in rise of serum testosterone in response to hCG would imply anorchism and would obviate the need for abdominal exploration.

Rajfer J: Congenital anomalies of the testis and scrotum, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 2178.

A 30-year-old woman with slowly progressive multiple sclerosis has urinary frequency, urgency, and incontinence. Residual urine is 800 ml. Three months after the initiation of clean intermittent catheterization, she complains of recurrent incontinence associated with an acute exacerbation of her multiple sclerosis requiring treatment by steroids. The incontinence is most likely due to:

A noncompliance with catheterization.

B detrusor-sphincter dyssynergia.

C hyperreflexic detrusor dysfunction.

D overflow incontinence.

E neuropathic urethral dysfunction.

A 30-year-old woman with slowly progressive multiple sclerosis has urinary frequency, urgency, and incontinence. Residual urine is 800 ml. Three months after the initiation of clean intermittent catheterization, she complains of recurrent incontinence associated with an acute exacerbation of her multiple sclerosis requiring treatment by steroids. The incontinence is most likely due to:

C: "hyperreflexic detrusor dysfunction." is correct.

Approximately one-third of patients with multiple sclerosis who are in retention go on to develop hyperreflexic bladder dysfunction and require anticholinergic agents. Urinary symptoms and urodynamic findings often change as the disease progresses and, for this reason, these patients must be carefully followed with the knowledge that therapy may need to be periodically altered.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its treatment, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 953-1006.

A 62-year-old woman with metastatic renal cancer develops lethargy and confusion. Laboratory studies reveal: serum calcium 15.6 mg/dl, phosphorus 4.4 mg/dl, and creatinine 2.0 mg/dl. The best initial therapy is:

A mithramycin.

B furosemide.

C steroids.

D intravenous saline.

E calcitonin.

A 62-year-old woman with metastatic renal cancer develops lethargy and confusion. Laboratory studies reveal: serum calcium 15.6 mg/dl, phosphorus 4.4 mg/dl, and creatinine 2.0 mg/dl. The best initial therapy is:

D: "intravenous saline." is correct.

This patient manifests the paraneoplastic syndrome of hypercalcemia. The hypercalcemia needs to be controlled promptly, and therapy should begin with hydration with isotonic sodium chloride. Hydration should result in an increase in calcium excretion and lowering of serum calcium levels to acceptable ranges. All other therapies are appropriate and effective if saline hydration is inadequate to return serum calcium to safe levels.

Menon M, Parulkar BG, Drach GW: Urinary lithiasis: Etiology, diagnosis, and medical management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, p 680.

One day following percutaneous nephrostolithotomy, hemiacidrin irrigation is initiated through the nephrostomy tube to manage residual fragments. Three hours after starting the irrigation, the patient becomes confused and hypotensive. The most likely cause of this condition is:

A hypermagnesemia.

B hypocalcemia.

C hypoxia.

D sepsis.

E hypokalemia.

One day following percutaneous nephrostolithotomy, hemiacidrin irrigation is initiated through the nephrostomy tube to manage residual fragments. Three hours after starting the irrigation, the patient becomes confused and hypotensive. The most likely cause of this condition is:

D: "sepsis." is correct.

Patients undergoing hemiacidrin irrigation for struvite calculi are susceptible to the absorption of magnesium, especially if the pressures in the renal pelvis become excessive. However, it is rare that toxic levels of magnesium could occur within the time frame stated in the above clinical scenario. Although antibiotics are routinely used peri-operatively in the treatment of struvite calculi, urinary sepsis may occur. Hypotension and confusion are common sequela of sepsis. Blood cultures would offer the best diagnostic study in this situation. Routine blood studies including electrolytes and serum magnesium should also be obtained but are less likely to provide the diagnosis. Acute calcium imbalance rarely occurs as the result of hemiacidrin irrigation or following percutaneous nephrolithotomy.

Angermeier K, Streem SB, Yost A: Simplified infusion method for 10% hemiacidrin irrigation of renal pelvis. UROL 1993;41:243-246.

Thirty hours after a successful left percutaneous nephrolithotomy, a 35-year-old man has a fever of 100.2 degrees Fahrenheit, ileus, urine mixed with feces from the nephrostomy tube, and bloody stools. His WBC is 18,000/cu mm. Nephrostogram demonstrates that the tube is transcolonic. The next steps are to administer parenteral antibiotics, prohibit food by mouth, and:

A observe the patient.

B withdraw the nephrostomy tube into the renal pelvis.

C place a second nephrostomy tube.

D perform a colostomy.

E close the bowel perforation.

Thirty hours after a successful left percutaneous nephrolithotomy, a 35-year-old man has a fever of 100.2 degrees Fahrenheit, ileus, urine mixed with feces from the nephrostomy tube, and bloody stools. His WBC is 18,000/cu mm. Nephrostogram demonstrates that the tube is transcolonic. The next steps are to administer parenteral antibiotics, prohibit food by mouth, and:

B: "withdraw the nephrostomy tube into the renal pelvis." is correct.

After withdrawing the nephrostomy tube into the renal pelvis, the colonic fistula will usually close in a few days if discovered promptly. Alternatively, the nephrostomy tube can be completely removed and a double-J stent inserted. Surgical closure or colostomy should be reserved for cases that have persistent fever and evidence of abscess formation.

Morse RM, Spirnak JP, Resnick MI: Iatrogenic colon and rectal injuries associated with urological intervention: Report of 14 patients. J UROL 1988;140:101-103.

Clayman RV, McDougall EM, Nakada SY: Endourology of the upper urinary tract: Percutaneous renal and ureteral procedures, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2809-2864.

A 57-year-old man has recurrent urinary stones. Previous stone analyses revealed both calcium oxalate monohydrate and uric acid. The underlying metabolic abnormality can best be determined with:

A urine pH.

B serum uric acid.

C urinary uric acid crystals.

D 24-hour urinary uric acid.

E sodium nitroprusside test.

A 57-year-old man has recurrent urinary stones. Previous stone analyses revealed both calcium oxalate monohydrate and uric acid. The underlying metabolic abnormality can best be determined with:

A: "urine pH." is correct.

Patients with gouty diathesis can form either uric acid or calcium stones. The most important diagnostic test in patients with gouty diathesis is urine pH, with these patients consistently having a urine pH below 5. Alkalization with potassium citrate will prevent formation of both uric acid and calcium oxalate stones in patients with gouty diathesis.

Khatchadourian J, Preminger GM, Whitson PA, Adams-Huet B, et al: Clinical and biochemical presentation of gouty diathesis: Comparison of uric acid versus pure calcium stone formation. J UROL 1995;154:1665-1669.

A 24-year-old man undergoes a left inguinal orchiectomy for removal of a Leydig cell tumor of the testis. CT scan of the abdomen is negative. The most appropriate management is:

A cis-platinum-based chemotherapy.

B retroperitoneal lymphadenectomy.

C subdiaphragmatic radiation therapy.

D contralateral testis biopsy.

E expectant therapy with periodic evaluations.

A 24-year-old man undergoes a left inguinal orchiectomy for removal of a Leydig cell tumor of the testis. CT scan of the abdomen is negative. The most appropriate management is:

E: "expectant therapy with periodic evaluations." is correct.

Most interstitial (Leydig) cell tumors are benign and confined to the testis. As a result, an inguinal orchiectomy is definitive therapy and aggressive adjuvant intervention is not indicated. Patients with these tumors can be followed with periodic evaluations consisting of endocrine studies and computed tomography of the retroperitoneum.

Richie JP: Neoplasms of the testis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 2439-2440.